

is challenging, and teams vary in their success. This study builds the evidence of key barriers and facilitators to effective community-engaged team science by drawing on the perspectives of seasoned researchers and community partners. **METHODS/STUDY POPULATION:** We conducted 3 focus groups with academic researchers (n=9) and 2 focus groups with community research partners (n=8). All participants were adults from the Southern California area, and had experience working on research teams that included academics and community partners. The focus group guide included questions about the participant's experience with community-engaged research, including the value of these partnerships, examples of success and challenges, and opportunities for improvement. Transcriptions of the focus group recordings were analyzed to identify key themes and insights, and to explore similarities and differences between academic and community participant perspectives. **RESULTS/ANTICIPATED RESULTS:** Both researchers and community partners saw the potential value of participating in community-engaged research. However, they identified challenges to address, including: 1) Community partners should be invited to participate in early stages of the research process as equal partners to help frame the objectives. 2) Community partner's knowledge should be valued through the use of their ideas and input, and providing monetary compensation for their time. 3) Academic researchers should aim to build long-term meaningful relationships with the community and build cultural competency (language, culture, and trust). 4) Community partners should be closely involved with the interpretation of results to confirm accuracy and identify valuable insights, and these contributions should be acknowledged. **DISCUSSION/SIGNIFICANCE:** Community partners being undervalued is a central challenge of community-engaged research teams. Greater adoption of best practices in team science could empower community partners and increase the value of this research. Structural barriers related to research funding and academic promotion should align to support these efforts.

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### Using Contingency Management to Understand the Cardiovascular, Immune and Psychosocial Benefits of Reduced Cocaine Use: A Protocol for a Randomized Controlled Trial

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**OBJECTIVES/GOALS:** Contingency management (CM) procedures yield measurable reductions in cocaine use. This poster describes a trial aimed at using CM as a vehicle to show the biopsychosocial health benefits of reduced use, rather than total abstinence, the currently accepted metric for treatment efficacy. **METHODS/STUDY POPULATION:** In this 12-week, randomized controlled trial, CM was used to reduce cocaine use and evaluate associated improvements in cardiovascular, immune, and psychosocial well-being. Adults aged 18 and older who sought treatment for cocaine use (N=127) were randomized into three groups in a 1:1:1 ratio: High Value (\$55) or Low Value (\$13) CM incentives for cocaine-negative urine samples or a non-contingent control group. They completed outpatient sessions three days per week across the 12-week intervention period, totaling 36 clinic visits and four post-treatment

follow-up visits. During each visit, participants provided observed urine samples and completed several assays of biopsychosocial health. **RESULTS/ANTICIPATED RESULTS:** Preliminary findings from generalized linear mixed effect modeling demonstrate the feasibility of the CM platform. Abstinence rates from cocaine use were significantly greater in the High Value group (47% negative; OR = 2.80; p = 0.01) relative to the Low Value (23% negative) and Control groups (24% negative). In the planned primary analysis, the level of cocaine use reduction based on cocaine-negative urine samples will serve as the primary predictor of cardiovascular (e.g., endothelin-1 levels), immune (e.g., IL-10 levels) and psychosocial (e.g., Addiction Severity Index) outcomes using results from the fitted models. **DISCUSSION/SIGNIFICANCE:** This research will advance the field by prospectively and comprehensively demonstrating the beneficial effects of reduced cocaine use. These outcomes can, in turn, support the adoption of reduced cocaine use as a viable alternative endpoint in cocaine treatment trials.

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### The viscous and fermentability properties of dietary fiber impact on chronic kidney disease-mineral and bone disorder\*

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**OBJECTIVES/GOALS:** Dietary fiber has been used in other clinical populations to improve mineral disorders, but there is limited data in chronic kidney disease, despite the high prevalence of mineral and bone disorder (known as CKD-MBD). Our objective was to evaluate the effect of dietary fiber based on viscosity and fermentability on CKD-MBD outcomes. **METHODS/STUDY POPULATION:** 22-week-old male CKD rats (mild-to-moderate CKD) were randomly assigned to receive one of four fiber treatments (10% w/w each) based on fermentability and viscosity: 1) Cellulose (-fermentability, -viscosity), 2) Inulin (+fermentability, -viscosity), 3) Psyllium husk (-fermentability, +viscosity), or 4) Pectin (+fermentability, +viscosity). Treatments lasted 10 weeks, and rats were euthanized at 32 weeks of age (kidney failure). Rats were placed in metabolic cages for 3 consecutive days the last week before euthanasia for mineral balance. At euthanasia, blood, tibia, heart, and aorta were collected for CKD-MBD assessment. Additional tissues collected included kidneys and all intestinal segments. **RESULTS/ANTICIPATED RESULTS:** Our preliminary data indicates that weight trajectories and survival were similar between treatment groups. At 33 weeks of age, kidney weight index (an indirect measurement of kidney function as this animal model develops polycystic kidneys) was lower in the psyllium-treated rats compared to all of the other treatments. Plasma phosphorus was lower with Psyllium and Pectin compared to Cellulose-treated rats. Left ventricular mass index was lower in the Inulin, Psyllium, and Pectin-treated rats compared to the Cellulose-treated rats. Ongoing tissue analyses include biochemical markers of mineral and bone metabolism (parathyroid hormone, fibroblast growth factor-23, and phosphorus balance), bone parameters (dynamic histomorphometry and microCT), and cardiovascular calcification. **DISCUSSION/SIGNIFICANCE:** Our preliminary data indicate that dietary fiber based on fermentability and viscosity impacts CKD-MBD outcomes and may be an innovative, low-cost intervention that