

Regular physical activity (PA) is linked to lower risk for several cancers (breast, colon, endometrial). Yet, most Americans are inactive, particularly in the Deep South. Cancer incidence/mortality is also generally higher in this region, with underserved (rural, African American) populations reporting even less PA and disproportionate cancer burden. Factors related to culture, distance from PA facilities, income, literacy, and Internet connectivity in the Deep South may limit access to PA information/resources and contribute to existing cancer disparities.

Telephone-supported interventions have shown success in increasing PA, do not require clinic visits, literacy, or costly technology, and thus may represent a promising strategy for promoting PA for cancer risk reduction in the Deep South, especially when automated with Interactive Voice Response (IVR) systems for improved cost-effectiveness and reach. Thus, we adapted an existing IVR system, used in past HIV studies, for PA promotion and cancer prevention in the Deep South through extensive literature review and formative research [11 focus groups on PA intervention needs/preferences with Deep South Network For Cancer Control community health advisors (CHAs) and community members]. A pilot trial of the resulting Deep south IVR-supported Active Lifestyle (DIAL) intervention (R03CA177538) found high retention and participant satisfaction at 12 weeks. Moreover, DIAL produced larger increases in MVPA (42.5 more min/week) from baseline to 12 weeks than a waitlist control, along with significantly greater improvements in PA self-regulation and social support. Results have informed intervention enhancements in preparation for scale up and dissemination in rural counties *(using IVR-initiated calls and wristbands to facilitate adherence; further targeting unchanged Social Cognitive Theory constructs; incorporating more interpersonal, community/organizational and policy level strategies for increased encouragement and accountability and to assess and address built environment)*.

*The current study will involve a fully powered randomized controlled trial of the refined, multi-level 12 month DIAL intervention with a waitlist control condition (N=240 rural, mostly African American adults).* Recruitment will be led by Deep South Network for Cancer Control CHAs in Black Belt counties (involved in project since initial formative research). Primary aims include examining arm differences in changes in moderate intensity or greater aerobic physical activity from baseline to 6 and 12 months. Exploratory aims include examining intervention effects on physical performance and psychosocial variables; changes in physical activity from 12-18 months; intervention costs; potential mediators *(social support from family, friends, CHAs)* and moderators of treatment efficacy *(neighborhood/ environmental features)*; and potential barriers/facilitators to widespread implementation of DIAL intervention in rural Black belt counties by Deep South Network for Cancer Control.