

related to the outcome (HR 1.4, 95%CI, 0.6-3.0). **DISCUSSION/SIGNIFICANCE OF IMPACT:** Young and middle-aged individuals with MSIMI after MI have a >2-fold higher likelihood of recurrent MI and CV mortality compared with those without MSIMI. In this patient group, MSIMI is a better risk indicator than ischemia with a conventional stress. These findings point to psychological stress as an important determinant of risk in this patient population. Ischemia induced by mental stress is a potent risk indicator in young post-MI patients. Stress-reduction interventions may be especially beneficial in patients who show this abnormal response.

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On the loss of individual joint controllability and the organization of muscle synergies in the impaired arm following a stroke: A pilot study

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OBJECTIVES/GOALS: Damage to the sensorimotor cortex areas or/and motor/sensory pathways after a stroke could lead the motor system to a loss of controllability for joints. We investigate the loss of individual joint controllability called a loss of individualization during arm movement, which would provide an insight into abnormal motor coordination. **METHODS/STUDY POPULATION:** We recruit 12 chronic stroke survivors with Fugl-Meyer score between 26 and 50. A robotic exoskeleton with minimum mechanical resistance is equipped to measure the movements of the shoulder, elbow and wrist joints, respectively. Surface EMGs on muscles related to the joints are recorded using 11 wireless pre-amplified electrodes. Participants are asked to move the shoulder, elbow, or wrist joint individually throughout their range of motion, without moving the other joints voluntarily. **RESULTS/ANTICIPATED RESULTS:** It would be expected that participants show more difficulty in individualization of the distal joint in comparison with the proximal joint. A reduced joint range of motion would be observed in a descending order of the wrist, elbow and shoulder. These results are in line with the proximal-to-distal gradient of motor deficits after a stroke. Intention of moving the distal joint would induce a greater deviation in the position of the proximal joint than that of the distal joint when moving the proximal joint. A non-negative matrix factorization algorithm would reveal a decreased number of muscle synergies in the groups with a loss of individuation in comparison with the groups with no loss. **DISCUSSION/SIGNIFICANCE OF IMPACT:** We demonstrate that a stroke leads to a lack of individual joint controllability, with a greater deficit on the distal joint, and that it is related to a decreased number of muscle synergies across the corresponding joints. **CONFLICT OF INTEREST DESCRIPTION:** N/A.

4125

Plan for a Retrospective Evaluation of a Multi-Modal Weight-centric Prediabetes Intervention.

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OBJECTIVES/GOALS: To determine if a multi-modal, interdisciplinary intervention delivered to a group of prediabetic patients will result in reduced rates of diabetes progression. This project is a retrospective evaluation that will exam the feasibility and possibly efficacy of this intervention. **METHODS/STUDY POPULATION:** We will

evaluate outcomes of 50 participants for the clinic, aged 21-60 inclusive. Patients will have a Body Mass Index >25kg/m² with a diagnosis of prediabetes. Patients must be non-pregnant, using approved contraception, and agree to not become pregnant for 1 year after enrollment. After enrollment, the initial treatment period is for 1 year and includes a 12 week low calorie diet plan, a 6-month intensive behavioral and lifestyle modification plan followed by a 6 month behavior reinforcement extension. Weight management medications may be used if appropriate for the patient from a clinical perspective during the 6-month intensive behavioral/lifestyle modification. **RESULTS/ANTICIPATED RESULTS:** It is anticipated that there will be decreased weight with a mean weight loss goal of approximately >10%. Furthermore, it is expected that there will be improvement of other markers of metabolic disease. These include improvement of lipid values (LDL-C, HDL-C, Triglycerides, Total Cholesterol) as well as blood pressure with expected blood pressures of below 130/80 in greater than 50% of participants. Finally, It is expected that 50% or greater participants will have improvement of glycemic control. It is anticipated that greater than 50% of participants will have improvement of glycemic control and achieve normoglycemia. These values will be determined based upon fasting glucose or A1c. **DISCUSSION/SIGNIFICANCE OF IMPACT:** The significance of this intervention is enormous. By demonstrating feasibility in this trial, we can work toward both assessing efficacy and possibly dissemination of this model program. If these interventions provide durable changes at scale, this could help slow the epidemic of obesity and obesity related comorbid conditions.

4036

POSITIVE EXPERIENCE OF INFORMED CONSENT UNDERSTANDING AT A METROPOLITAN MULTI-INSTITUTIONS CTSA HUB

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OBJECTIVES/GOALS: There is not much known on how to improve informed consent understanding and there are no effective interventions that have been identified to improve understanding rates of information. This study seeks to assess participants understanding of the informed consent. **METHODS/STUDY POPULATION:** We studied a non-probability sample of 245 participants, 57% female, with age range from 6 to 84, currently enrolled in clinical trials conducted at an urban city, multi CTSA institution. A self-administered questionnaire approved by IRB was utilized. Redcap database was utilized for data entry. The items in the questionnaire reflected understanding of the informed consent (e.g., purpose for the study, participants' rights, risks, benefits). Participants completed the survey during their first visit to the research centers or on a follow-up visit. Data were collected from July 2018 to November 2019. Data were analyzed descriptively by summary statistics. **RESULTS/ANTICIPATED RESULTS:** African Americans were 44%, Non-Hispanic Whites were 36%, Hispanic 6%. Others 13%. 52% married, 12% completed High school, 74.8% completed College, 13% less High school. 91% read the form themselves. 99% knew the purpose of the study; 99% knew they could quit the study at any time. While (113) 47% indicated knowledge of the potential risk, only (12)10.6% could not list any associated risk. 98% stated they had information on who to call with questions regarding the study. (204)86% knew of a potential benefit, only (11)5% could