Midwestern division, national supermarket-community pharmacy chain, where study procedures were conducted. Dr. Snyder reports personal fees from Westat, Inc., outside the submitted work.

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Preoperative Goal-setting by Patients is Correlated with Baseline and Not 6-week Outcomes following Total Knee Arthroplasty (TKA)

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OBJECTIVES/GOALS: Patient beliefs and goals can facilitate discussion of recovery expectations, patient-provider collaboration and maximization of goal achievement. In this study, we sought to address an evidence gap and examine the association of preoperative self-assessment of goals with preoperative and 6-week knee function and gait speed among total knee arthroplasty (TKA) patients. METHODS/STUDY POPULATION: We conducted a secondary analysis of data from the VERITAS randomized, controlled trial conducted from 11/2016-03/2018 that included adults age $\geq$ 18 years with scheduled and completed unilateral TKA followed by post-surgical physical therapy. Patients rated their ability to perform various activities of daily living goals scaled from 0 (unable to perform) to 10 (full performance). Patients were categorized by pre-surgical (baseline) goal rating: low = 0-2, intermediate = 3-4, and high = 5-10. Outcomes including gait speed and the KOOS were assessed within 10 days prior to surgery and 6-weeks post-surgery. Descriptive statistics and outcomes were compared for patients by preoperative goal rating using Chi-square or Fisher's exact tests and ANOVA or Kruskal-Wallis tests as appropriate. RESULTS/ANTICIPATED RESULTS: Of 288 patients (mean age 65±8; 62.5% women; 82% white), 102 had a low goal rating (GR), 86 intermediate, and 99 high. Patients with low GR preoperatively generally had lower baseline mean scores than intermediate and high GR patients, respectively, on the KOOS (33.9/35.6/39.8; p<0.001) and lower gait speed (m/s) compared to intermediate and high GR patients at baseline (0.9/1.1/1.0; p = 0.009). The low, intermediate, and high GR groups, respectively, showed no difference across mean KOOS scores (61.0/61.2/61.9; p = 0.63) or gait speed (m/s) (1.0/1.0/1.0, p = 0.33) at 6 weeks postoperative. DISCUSSION/SIGNIFICANCE OF IMPACT: In this study, adults who perceived greater difficulty with a pre-selected activity goal, exhibited lower function prior to TKA but showed no differences in function 6-weeks after surgery. Follow-up studies will describe the association between goal-setting preoperatively and patient goal attainment and satisfaction following surgery.

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Racial/ethnic difference in the relationship between periodontitis and cardiovascular disease among adult populations

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OBJECTIVES/GOALS: Several lines of studies have supported the existence of periodontitis (inflammation of the gums) as a risk factor for cardiovascular disease (CVD). The goal of this study is to evaluate the relationship between periodontitis and CVD among Hispanic, African American, and Caucasian populations. METHODS/ STUDY POPULATION: We analyzed data from the National Health and Nutrition Examination Survey, 1999-2004 (NHANES). The population was all adults with a periodontal exam. Periodontal Disease was defined as mild, moderate, and severe (2 loss of attachments of at least 3mm, 2 sites with probing depth of at least 4mm, or one site with probing depth of at least 5mm). Cardiovascular disease was defined by a questionnaire regarding prevalence of any of 5 diagnosis (congestive heart failure [CHF], coronary artery disease [CAD], angina, heart attack or stroke). Data were analyzed using multinomial regression in SAS version 9.3 taking into consideration the design and weight. RESULTS/ ANTICIPATED RESULTS: The study included 3375 adults; 13% were Hispanic and 10% were Blacks, 58% had > high school education, 81% were insured, 11% were heavy alcohol drinkers, 27% were smokers, 13% were physically inactive, 14% had periodontitis, 62% visited dentist last year, 2% had CHD, and 1.5% had CHF or stroke. In the multiple multinomial regression, overall, people with periodontitis were more likely to have both CHD (AOR = 2.0, 95% CI = 1.1-3.8, p<0.05) and CHF or stroke (AOR = 1.8, 95% CI = 1.01, 3.0, p<0.05) than to have no heart condition. There was a racial/ethnic difference in the relationship between periodontitis and cardiovascular disease but it was not statistically significant (p>0.05). DISCUSSION/SIGNIFICANCE OF IMPACT: Overall, people with periodontitis were more likely to have CHD, CHF or stroke than to have no heart condition, but with no significant effect of racial/ethnic group. This study provides a foundation to future studies on the connection of periodontitis and CVD in relation to ethnic/racial groups.

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Racial/ethnic variation in the relation between diabetes control and healthy eating, food security, exercise, and access to health care

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OBJECTIVES/GOALS: Diabetes mellitus is a common metabolic disease. Uncontrolled diabetes can lead to complications. The objective of this study is to examine the racial/ethnic variation in the relation between diabetes control and healthy eating, food security, exercise, and access to health care. METHODS/STUDY POPULATION: We analyzed data related to diabetes control, demographics, insurance, healthy eating, food security and physical activity for 949 diabetics from the National Health and Nutrition Examination Survey (NHANES). The population examined was adults with diabetes mellitus. Diabetes control was classified as fair control [HbA1c 7-<8 and fasting glucose <126 mg/dL], good control [HbA1c<7 and fasting glucose <110 mg/dL] or uncontrolled [HbA1c8 and fasting glucose <110 mg/dL]. We used multinomial logistic regression controlling for confounders to analyze the data overall and for each racial/ethnic group and report adjusted odds ratios (AOR) and 95% confidence limits (CL). RESULTS/ ANTICIPATED RESULTS: Of the 949 diabetics, 14.7% were Blacks, 15.9% were Hispanics, 11.0% had fair control, 61.0% had good control, 14.2% were uninsured, 18.1% had low/very low food security, and 39.7% were inactive. Overall, uninsured subjects had a lower chance of fair diabetes control (AOR = 0.2, 95% CL = 0.1-0.9, p = 0.04), but this relationship was significant only for Hispanics and Blacks (p<0.05). Whites with low/very low food security were less likely to have fair control (AOR = 0.2, 95% CI = 0.001-

0.9, p = 0.04). Blacks who were inactive, and insufficiently active Hispanics had a lower chance of good/excellent diabetes control (AOR = 0.5, 95% CI = 0.2-0.9, p = 0.03; AOR = 0.3, 95% CI = 0.1-0.7, p = 0.007 respectively). DISCUSSION/SIGNIFICANCE OF IMPACT: The results show the importance of insurance coverage, food security and physical activity in diabetes control among different racial/ethnic groups. They indicate a need for affordable health care and for culturally-relevant interventions that include physical activity and food security.

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Renal Tubular Complement C9 Deposition is Associated with Renal Tubular Damage and Fibrosis in Lupus Nephritis

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OBJECTIVES/GOALS: Tubulointerstitial damage in lupus nephritis (LN) is a strong predictor of progression to chronic kidney disease and end stage renal disease (ESRD). While complement activation mediates glomerular injury, the role of complement in renal tubular damage has not been evaluated. We investigated the association between complement activation and tubulointerstitial fibrosis. METHODS/STUDY POPULATION: Patients with LN were selected randomly between July 2014 - July 2016. Chromogenic immunohistochemistry was performed on formalin-fixed, paraffin-embedded, 4-μm human renal biopsy sections using unconjugated, murine anti-human Complement C9 (Hycult Biotech, clone X197) as a marker of the terminal complement activation. Positive control is C3 glomerulopathy and negative control is normal kidney. Tubular basement membrane C9 staining intensity were analyzed on semiquantitative scale 0 to 3 by a renal pathologist. Interstitial fibrosis/tubular atrophy were categorized into low (0–10%), medium (11–20%), or high (≥21%). Clinical parameters were assessed at time of biopsy and 6 months post biopsy. Bivariate associations were assessed between presence of tubular C9 (C9+) and other covariates. RESULTS/ANTICIPATED RESULTS: Renal biopsies from 30 LN studied, 23 (77%) of which had proliferative LN. There were 24 (80%) women, mean (SD) age 33 (12) years. Positive tubular C9 staining was observed in 7/30 (23%) biopsies. At time of renal biopsy, C9+ patients had significantly higher urine protein, compared to C9- patients: median (IQR) 6.2g (3.3-13.1) vs. 2.4g (1.3-4.6), p<0.01. The differences persisted at 6 months after induction therapy: 1.08g (1.0-8.3) in C9+ vs. 0.68g (0.2-2.1) in C9- patients, p = 0.06. There was no significant difference in creatinine at renal biopsy between the two groups. Tubular C9 deposition was associated with interstitial fibrosis: 49% had severe interstitial fibrosis vs. none in the C9- group, p = <0.01. Higher proportion of C9+ patients had moderate NIH Chronicity index: 42.9% vs 8.7% in the C9- group, p = 0.07. DISCUSSION/SIGNIFICANCE OF IMPACT: Tubular C9 deposition is significantly associated with proteinuria, interstitial fibrosis and increased chronicity which predict progression to ESRD and high mortality. This finding suggests that complement activation in the tubules may be linked to proteinuria and contribute to mechanism in tubulointerstitial damage in LN.

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Risk Aversion in Lung Transplantation: Organ Procurement Organizations Differ in Willingness to Pursue Non-ideal Donor Organs

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OBJECTIVES/GOALS: Lung transplant (LTx) candidates benefit from use of non-ideal donor organs. Each organ procurement organization (OPO) defines "acceptable" donor organs introducing unmeasured variation in donor pursuit. We characterized non-ideal donor pursuit among OPOs to identify drivers of risk aversion in LTx. METHODS/STUDY POPULATION: We queried the UNOS registry for adult donors who donated ≥1 organ for transplantation from 12/2007-12/2018. Non-ideal donors were those with any of age>50, smoking history ≥20 pack-years, PaO_2/FiO_2 (P/F) ratio<350, donation after cardiac death (DCD) status, or CDC increased risk (IRD) status. Non-ideal donor pursuit rate was defined as the proportion of non-ideal donors at each OPO from whom consent for lung donation was requested with lower numbers indicating increased risk aversion. We estimated the correlation between non-ideal and overall donor pursuit using a Spearman correlation coefficient. Adjusted non-ideal donor pursuit rates were estimated using multivariable logistic regression. RESULTS/ANTICIPATED RESULTS: Overall, 18,333 deceased donors were included and classified as ideal or non-ideal. Among 58 OPOs, rates of non-ideal donor pursuit ranged from 0.24-1.00 **Figure**). Of 5 non-ideal characteristics, DCD and IRD status were associated with the most and least risk aversion, respectively. Non-ideal donor pursuit was strongly correlated with overall donor pursuit (r = 0.99). On adjusted analysis, older age (OR 0.15, 95% CI 0.13-0.16), smoking history (OR 0.38, 95% CI 0.34-0.44), low P/F ratio (OR 0.12, 95% CI 0.11-0.14), and DCD status (OR 0.04, 95% CI 0.03-0.04) were all independently associated with significant risk aversion, corresponding to decreased rates of donor pursuit. DISCUSSION/SIGNIFICANCE OF IMPACT: OPOs differ in their levels of risk aversion in LTx and risk aversion is not uniform across selected categories of non-ideal lung donor. Consideration of new OPO performance metrics that encourage the pursuit of non-ideal lung donors is warranted.

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Sex Differences in the Cortical Structure in Children with Irritability and Disruptive Behavior[†]

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OBJECTIVES/GOALS: This study examines sex differences in brain structure in youths with disruptive behavior disorders (DBD). We use measures of gray matter volume (GMV) in regions-of-interest implicated in the pathophysiology of conduct problems and a whole-brain analysis of cortical thickness. We also examine unique associations between brain structure and callous-unemotional traits. METHODS/STUDY POPULATION: This study included 90 children with a DBD (30 females) aged 8-16 and 50 Healthy Controls