22nd Annual Forum on Aging

Sponsored by
The Sealy Center on Aging in collaboration with Research Services

October 18, 2018
5:00p.m. to 7:00p.m.
Levin Hall Dining Room

Web Site: http://www.utmb.edu/scoa
Dear Forum on Aging Attendees:

On behalf of the Sealy Center on Aging and the Department of Research Services, I would like to thank you for being a part of the 22nd Annual Forum on Aging poster session. This is one of the events that we look forward to most during the year, as it provides an opportunity for researchers from all backgrounds and levels of expertise to share their aging-related work.

The major purpose of the forum is to inform gerontology researchers, in particular, and the UTMB community, in general, of the types of research on aging going on at UTMB and of the resources available from the Sealy Center on Aging. This year, we are proud to say we have posters from teams of investigators encompassing all UTMB Schools here to showcase their research.

Again this year, we’d like to extend a special “thank you” to Sigma Xi for sponsoring some of the awards and to Research Services for their support with the event. Best of luck to all the students and postdoctoral fellows/residents who have submitted a poster for this event.

Thank you for joining us, and we hope you enjoy this evening as much as we do.

Sincerely,

Elena Volpi, MD, PhD
Director, Sealy Center on Aging
TABLE OF CONTENTS

Poster Index by First Author/Board Number Index

Poster Presentation Abstracts

Programs & Services/Award Winners

* Editorial Services
* Geriatric Medicine Fellowship Program
* MSTAR Program
* Research Services
* UTMB Aging-Related Grant Funding
* Forum on Aging Award Winners
* Lefeber Scholar Award Winners
<table>
<thead>
<tr>
<th>Name</th>
<th>Board Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abara, Ndidi</td>
<td>25, 63**</td>
</tr>
<tr>
<td>Al-Lahham, Rabab</td>
<td>28**</td>
</tr>
<tr>
<td>Alzubaidy, Layth</td>
<td>52*</td>
</tr>
<tr>
<td>Ayaz, Talha</td>
<td>46*</td>
</tr>
<tr>
<td>Barrett, Diane</td>
<td>29</td>
</tr>
<tr>
<td>Bentley, Jason</td>
<td>69*</td>
</tr>
<tr>
<td>Bourne, Krystyn</td>
<td>42</td>
</tr>
<tr>
<td>Brightwell, Camille</td>
<td>18, 19*</td>
</tr>
<tr>
<td>Cantu, Alexander</td>
<td>44*</td>
</tr>
<tr>
<td>Carpenter, Lakin</td>
<td>70*</td>
</tr>
<tr>
<td>Cleveland, Jennifer</td>
<td>23*</td>
</tr>
<tr>
<td>Contrera Avila, Jaqueline</td>
<td>76*</td>
</tr>
<tr>
<td>Crain, Rebecca</td>
<td>53*</td>
</tr>
<tr>
<td>Cruz-Flores, Rodrigo</td>
<td>55**</td>
</tr>
<tr>
<td>Davis, John</td>
<td>51*</td>
</tr>
<tr>
<td>Downer, Paige</td>
<td>79*</td>
</tr>
<tr>
<td>Ferris, Clarissa</td>
<td>17*</td>
</tr>
<tr>
<td>Franklin, Whitney</td>
<td>37*</td>
</tr>
<tr>
<td>Gibson, Derrick</td>
<td>77*</td>
</tr>
<tr>
<td>Gonzalez, Melissa</td>
<td>73*</td>
</tr>
<tr>
<td>Goodlett, Shawn</td>
<td>2</td>
</tr>
<tr>
<td>Goodwin, James</td>
<td>4</td>
</tr>
<tr>
<td>Gove, Delaney</td>
<td>21*</td>
</tr>
<tr>
<td>Gupta, Praveena</td>
<td>41</td>
</tr>
<tr>
<td>Glidden, Calvin</td>
<td>66*</td>
</tr>
<tr>
<td>Hanson, Madeline</td>
<td>34*</td>
</tr>
<tr>
<td>Huang, Nicole</td>
<td>43*</td>
</tr>
<tr>
<td>James, Coleen</td>
<td>60, 61</td>
</tr>
<tr>
<td>Javed, Zulqarnain</td>
<td>47*</td>
</tr>
<tr>
<td>Jimenez, Antonio</td>
<td>78*</td>
</tr>
<tr>
<td>Johnson, Jason</td>
<td>74*</td>
</tr>
<tr>
<td>Kanwar, Meeta</td>
<td>80*</td>
</tr>
<tr>
<td>Krill, Timothy</td>
<td>26**</td>
</tr>
<tr>
<td>Kuo, Yong-Fang</td>
<td>11</td>
</tr>
<tr>
<td>Li, Chih-Ying</td>
<td>71, 72</td>
</tr>
<tr>
<td>Marino, Claudia</td>
<td>38*</td>
</tr>
<tr>
<td>Maxwell, Erin</td>
<td>24*</td>
</tr>
<tr>
<td>Michael, Tammie</td>
<td>49*</td>
</tr>
<tr>
<td>Milani, Sadaf</td>
<td>58**</td>
</tr>
<tr>
<td>Moran, Jacob</td>
<td>50*</td>
</tr>
<tr>
<td>Moro, Tatiana</td>
<td>27**</td>
</tr>
<tr>
<td>Nguyen, Anthony</td>
<td>20*</td>
</tr>
<tr>
<td>Nguyen, Christine</td>
<td>81*</td>
</tr>
<tr>
<td>Nowakowski, Sara</td>
<td>33</td>
</tr>
<tr>
<td>O'Brien, Katie</td>
<td>22*</td>
</tr>
<tr>
<td>Oguike, Ijeoma</td>
<td>62*</td>
</tr>
<tr>
<td>Ogunlana, Oluwatosin</td>
<td>30</td>
</tr>
<tr>
<td>Onoviran, Olusola</td>
<td>31</td>
</tr>
<tr>
<td>Ortiz, Stephanie</td>
<td>84*</td>
</tr>
<tr>
<td>Ottenbacher, Kenneth</td>
<td>5</td>
</tr>
<tr>
<td>Penton, Rebekah</td>
<td>59</td>
</tr>
<tr>
<td>Perkins, Jaclyn</td>
<td>14*</td>
</tr>
<tr>
<td>Potluri, Vamsi</td>
<td>54*</td>
</tr>
<tr>
<td>Randolph, Amanda</td>
<td>15, 16*</td>
</tr>
<tr>
<td>Rasmussen, Blake</td>
<td>6</td>
</tr>
<tr>
<td>Ray-Zack, Mo</td>
<td>56, 57**</td>
</tr>
<tr>
<td>Roberts, Paige</td>
<td>36*</td>
</tr>
<tr>
<td>Rotkiewicz, Anna</td>
<td>32</td>
</tr>
<tr>
<td>Saenz, Sergio</td>
<td>75*</td>
</tr>
<tr>
<td>Saieva, Salvatore</td>
<td>40*</td>
</tr>
<tr>
<td>Samper-Ternent, Rafael</td>
<td>82</td>
</tr>
<tr>
<td>Shah, Rahul</td>
<td>48*</td>
</tr>
<tr>
<td>Sodhi, Jaspreet</td>
<td>67, 68*</td>
</tr>
<tr>
<td>Sonkar, Jaya</td>
<td>64, 65**</td>
</tr>
<tr>
<td>Sultana, Rizwana</td>
<td>83</td>
</tr>
<tr>
<td>Toombs Smith, Sarah</td>
<td>10</td>
</tr>
<tr>
<td>Velarde, Brenda</td>
<td>12*</td>
</tr>
<tr>
<td>Volpi, Elena</td>
<td>1, 3, 8, 9</td>
</tr>
<tr>
<td>Wadsworth, Paul</td>
<td>35*</td>
</tr>
<tr>
<td>Wells, Stephanie</td>
<td>13*</td>
</tr>
<tr>
<td>Wong, Rebeca</td>
<td>7</td>
</tr>
<tr>
<td>Yakob, Avesta</td>
<td>45*</td>
</tr>
<tr>
<td>Zolochevska, Olga</td>
<td>39*</td>
</tr>
</tbody>
</table>
CLAUDE D. PEPPER OLDER AMERICANS INDEPENDENCE CENTER (OAIC)

Elena Volpi, MD, PhD, Sealy Center on Aging

The UTMB Pepper Center is currently comprised of five cores led by senior investigators of the Sealy Center on Aging: the Leadership Administrative Core, led by Drs. Elena Volpi and James S. Goodwin; the Research Education Component/RL5 Program, led by Drs. Kenneth Ottenbacher, Rebeca Wong and James S. Goodwin; the Pilot/Exploratory Studies Core, led by Drs. Douglas Paddon-Jones and Kyriakos Markides; the Clinical Research Resource Core, led by Drs. Elena Volpi, Timothy Reistetter and Jacques Baillargeon; the Metabolism and Biology Resource Core, led by Dr. Blake Rasmussen and Christopher Fry; and the Biostatistics and Data Management Resource Core, led by Drs. Kristopher Jennings and Yong-Fang Kuo.

The Center has been continuously funded since 2000. From the very beginning, we have nurtured a multidisciplinary translational research culture to fulfill our mission, which is to improve physical function and independence in older adults. Central to this mission is the career development and training of the next generation of leaders in geriatric research.

Our scientific focus has evolved over the years from a narrow interest in the mechanisms of sarcopenia to the translation of our findings in much needed patient-centered interventions to improve physical function and independence. This evolution derives not only from the natural progression of our research from basic discoveries to healthy humans and from healthy humans to patients, but also from a deliberate effort of the OAIC leadership to promote and support collaborations between scientists in muscle aging and investigators in population health and outcomes research on aging and rehabilitation. This second line of research has always been present from the beginning of our OAIC, but was conducted in parallel with muscle research. The intersection of these two lines has accelerated the development of new research foci. An example is the rapid development of patient-centered outcomes research in the elderly, which culminated with the funding of a large infrastructure grant and, more recently, with our participation in the trans-Pepper patient-centered multicenter clinical trial on fall prevention.
GERIATRIC RESEARCH ON THE ACUTE CARE FOR ELDERS (ACE) UNIT

Shawn M. Goodlett, Sealy Center on Aging
Victoria Randle, Sealy Center on Aging
Rachel R. Deer, PhD, Department of Nutrition and Metabolism
Roxana M. Hirst, MS, Sealy Center on Aging
Elena Volpi, MD, PhD, Sealy Center on Aging

The Acute Care for Elders (ACE) unit at UTMB opened in October 2000 at John Sealy Hospital. This geriatric unit, now located at the new Jennie Sealy Hospital, utilizes a unique interdisciplinary approach to patient care with nurses, physicians, case managers, and therapists who have been trained in the special needs of older adults.

Geriatric research is crucial to the advancement of translational research and evidence-based practice. The vision of our research is to make the ACE unit nationally renowned for interdisciplinary translational programs. To work towards this vision, the research objectives are to better understand the health experience of a diverse group of older patients hospitalized with an acute illness and identify those older patients vulnerable to further health declines.

Our team recently completed a pilot randomized clinical trial “Feasibility study of post-hospitalization interventions to improve physical function in older adults (PACE)” with 100 subjects to test the feasibility and efficacy of exercise, nutrition, and testosterone interventions to improve physical function in elderly adults after discharge. Currently, there are two major studies led by our team of investigators on the unit. The first is a Phase 1 double-blind randomized clinical trial “Translating Muscle Anabolic Strategies into Interventions to Accelerate Recovery from Hospitalization in Geriatric Patients (GRAMS).” The second is an observational study “Prevalence of Malnutrition and/or Sarcopenia at Hospital Admission (MASS).” Additionally, our team collaborates with other researchers and physicians. Using the information collected, our interdisciplinary team of investigators has the potential to provide important scientific information on the health and health outcomes of hospitalized older patients.
3

Program Information

THE STRIDE STUDY, NIA AND PCORI MULTICENTER TRIAL: STRATEGIES TO REDUCE INJURIES AND DEVELOP CONFIDENCE IN ELDERS

Elena Volpi, MD, PhD, Sealy Center on Aging
Summer Chapman, RN, MSN, Sealy Center on Aging
Roxana Hirst, MS, Sealy Center on Aging
Eloisa Martinez, BS, Sealy Center on Aging

The STRIDE Study is a cluster randomized, evidence-based, patient-centered multifactorial fall injury prevention strategy.

Each person in the trial will be assessed for his or her risk of falling, and receive either the current standard of care—primarily information about preventing falls—or the experimental study intervention in which individualized care plans will be developed and administered. The care plans will be presented to the participant’s primary care physician for review, modification, and approval and will include proven fall risk reduction interventions that can be implemented by the research team, physicians and other health care providers, caregivers and community-based organizations. The intervention centers on the concept of a falls care manager working with each participant’s primary care provider to develop the plans and monitor success.

The research team plans to enroll 6,000 adults age 75 and older, living in the community, with one or more modifiable risk factors for falls. The first year of the study was a pilot phase, during which many aspects of the intervention were tested with small numbers of people across 10 clinical sites. The enrollment for the full trial started on August 1, 2015 and will take place over 18 months. The participants will be followed for up to three years.

The primary trial outcome is reduction in serious fall injuries, including non-spinal fractures, joint dislocation, head injuries, lacerations, internal injuries, and hypothermia. Secondary outcomes include reduction in all falls that cause injuries; all falls regardless of injury; indicators of well-being, physical function and disability; and anxiety and depression.

Ten trial sites across the country have been chosen to address geographic, rural/urban, academic/non-academic, and racial/ethnic diversity, and models of care.
COMPARATIVE EFFECTIVENESS RESEARCH ON CANCER IN TEXAS (CERCIT)

James S. Goodwin, MD, Division of Geriatrics

Comparative Effectiveness Research (CER) recognizes that different patients respond differently to the same treatment. Furthermore, patients differ in their preferences, in their prioritization among various health outcomes. The first five years of CERCIT aimed to increase the evidence to support individualized care by assessing outcomes of treatment in comparative effectiveness research (CER) using large administrative databases. CERCIT is based at UTMB, and several of the projects involve investigators from MD Anderson.

In the refunded CERCIT renewal, we are building on the findings of our analyses of administrative data while expanding our methods to better measure individual patient characteristics and include information on patient preferences and patient reported outcomes. Our goal is to generate evidence that will assist patients and their physicians in individualized decision making when faced with choices among different options in screening, treatment and end of life care in cancer.

This multi-institutional grant program consists of three cores: (1) Administrative Core [Goodwin, PI], (2) Data Management and Analytics Core [Kuo, PI], and (3) Survey Core [Peterson, PI]. These will serve the four research projects within the grant, which are the following:

Project 1: Screening for Cancer in Texas
PI: James S. Goodwin, MD

Project 2: Chemotherapy Treatment Choices in Older Patients with Cancer
PI: Sharon Giordano, MD, MPH

Project 3: Assisting Cancer Patients with Surgery and Radiation Treatment Choices
PI: Benjamin Smith, MD

Project 4: Investigating Patient Preferences Regarding End-of-Life Care Among Cancer Patients in Texas
PI: Ashleigh Guadagnolo, MD, MPH
5

Program Information

CENTER FOR LARGE DATA RESEARCH AND DATA SHARING IN REHABILITATION

Kenneth J. Ottenbacher, PhD, OTR, Division of Rehabilitation Sciences
Amol M. Karmarkar, PhD, Division of Rehabilitation Sciences
Matthew Lakich, MPH, Division of Rehabilitation Sciences
Beth A. Cammarn, CRA, Division of Rehabilitation Sciences

The Center for Large Data Research (CLDR) and Data Sharing in Rehabilitation is an extension of the previously funded (R24), Center for Rehabilitation Research using Large Datasets (CRRLD). The CRRLD was funded in 2010 to build scientific capacity among rehabilitation scientists in research using large healthcare and administrative datasets. The CLDR continues to build scientific capacity in large data research by focusing on education and learning experiences designed to promote collaborative research through our successful pilot studies and visiting scholar programs. The mission of the CLDR was expanded to include an important focus on data sharing and archiving information from completed rehabilitation research studies. This new focus addresses recent federal requirements for sharing information and data from research studies supported by government funding, which will result in datasets becoming available for secondary data analysis by rehabilitation and disability investigators.

The CLDR involves a consortium of investigators from the University of Texas Medical Branch, Cornell University, the University of Michigan, and Colorado State University. The CLDR develops education and training programs, facilitates interdisciplinary collaboration, and supports pilot studies. Each of these components includes activities and learning experiences involving the Center’s two focus areas:

- Developing research capacity in the design, analyses and interpretation of large data, and
- Creating an infrastructure to support archiving and sharing information from completed rehabilitation research studies in order to make them available for secondary data analyses.

The new center expands our successful Rehabilitation Data Directory with the creation of an archiving and data sharing portal. The portal provides access to archived datasets along with information and learning opportunities related to data sharing. The CLDR is building scientific capacity in important new areas related to health care reform and large data research that will advance rehabilitation science and practice.

Information regarding the Center’s programs and services are available at: https://www.utmb.edu/cldr.
6

Program Information

CENTER FOR RECOVERY, PHYSICAL ACTIVITY AND NUTRITION

Blake Rasmussen, PhD, Department of Nutrition and Metabolism
Kenneth Ottenbacher, PhD, OTR, Division of Rehabilitation Sciences
Beth Cammarn, CRA, Division of Rehabilitation Sciences

The Center for Recovery, Physical Activity and Nutrition is committed to creating relationships among basic and clinical scientists to translate and apply research findings for the benefit of persons with disability or chronic disease and their families. The Center also develops and participates in collaborative research to reduce or prevent the loss of mobility and function in at-risk and vulnerable populations. Originally established in 2001 as the Center for Rehabilitation Sciences, the mission and focus of the Center was expanded in 2013 as part of the School of Health Professions (SHP) Research Strategic Planning process. The Center’s activities and programs continue to be guided by the enabling-disabling conceptual model originally described in the Institute of Medicine (IOM) report titled “Enabling America” (1997) and updated in the 2007 IOM report “The Future of Disability in America.” The goal of the Center is to integrate research involving physical activity, exercise, function and nutrition to provide new opportunities for education and scientific training and external grant funding, and to create collaborative research partnerships consistent with the mission of the SHP and UTMB, and the objectives and priorities of the Affordable Care Act and national health care reform.

Information regarding the Center’s programs and services are available at: https://www.utmb.edu/cerpan.
THE MEXICAN HEALTH AND AGING STUDY (MHAS)

Rebeca Wong, PhD, Preventive Medicine and Community Health

The Mexican Health and Aging Study (MHAS) is a longitudinal study of Mexican aging with a national sample of persons aged 50 and older, or born in 1951 or earlier (n=15,000). The study protocols and survey instruments are highly comparable to the U.S. Health and Retirement Study (HRS). Emphasis areas are the study of aging in a mixed infectious-chronic epidemiological regime; assessment of the quality of self-report; the continuous Mexico-U.S. migration and its consequences for aging; the impact of an important health sector reform in Mexico (in 2004); health and economic conditions in early life and their consequences in old age; and mortality. The data enables enhanced research on aging and related population changes: of physical and mental health and disability, cognition, health behaviors and health care use, family support, aging and the life course, wealth, income, labor and retirement, migration and old age, and mortality. This is a unique cohort for the study of aging in a developing country aging fast with limited institutional support for individuals in old age. In addition, the data enables cross-period and cross-cohort analyses of health and aging, and is highly comparable with other similar studies in developed and developing countries, in particular the United States, enhancing the study of aging and health with a cross-national perspective.

Four waves of data have been collected so far (2001, 2003, 2012 and 2015) and two more waves are planned for 2018 and 2021. In 2012, a new sample was added from the 1952-1962 birth cohorts. A new refresher sample, from the 1963-1968 birth cohort, will be added in 2018. In addition, the study is planning to collect hair samples from a sub-sample to study environmental health in Mexican older adults. Also new to the fifth wave of the study is the collection of saliva samples for genetics, among subjects aged 60 and older.

Data bases are available to the research community free of charge through the study website. For more details, see: www.MHASweb.org.

The MHAS is partly supported by the National Institutes of Health/National Institute on Aging (R01AG018016, R. Wong, PI) and the National Institute of Statistics and Geography (Instituto Nacional de Estadística y Geografía, INEGI) in Mexico.

ANCILLARY STUDY

The MHAS also served as the basis for a timely Cognitive Aging Ancillary Study (Mex-Cog), in which a sub-sample (n=2,265) of the MHAS 2015 national sample successfully completed an in-depth cognitive assessment and/or informant questionnaire in 2016. The purpose of the study is to estimate the prevalence of dementia and its covariant factors, leveraging the use of existing cohort studies on aging. The Mex-Cog study was completed in harmonization with similar studies in the U.S. (HRS), England (ELSA), India (LASI), China (CHARLS), and others, under the Brain Initiative of the NIA/NIH (Grant R01-AG051158, R. Wong, PI).

BLOOD SAMPLES FOR GENETIC ANALYSIS

The MHAS also collected blood samples from two sub-samples selected in 2012 (n=2,009) and 2016 (n=750) for genetic analysis. Blood samples were used also to obtain key biomarkers (Glucose, Hemoglobin, Vitamin D, Cholesterol, Thyroid hormone, C-reactive protein).
8

Program Information

COMBINING TESTOSTERONE THERAPY AND EXERCISE TO IMPROVE FUNCTION POST-HIP FRACTURE (STEP-HI TRIAL)

Elena Volpi, MD, PhD, Sealy Center on Aging
Eloisa Martinez, BS, Sealy Center on Aging
Rae M. Kretzmer, MS, RDN, CPT, Sealy Center on Aging
Roxanna Hirst, MS, Sealy Center on Aging
Shawn Goodlett, Sealy Center on Aging
Steven R. Fisher, PT, PhD, School of Health Professions

With more than 265,000 hip fractures occurring each year in the United States, approximately 75% of them occur in women (198,000+ females) and 90% of these women are at least 70 years old. Up to 60% of previously high-functioning patients require assistance with activities of daily living following a hip fracture. Inevitably, thousands of patients require assisted living after surgery and while physical therapy is rapidly introduced within the first week post-operation, that is typically the only line of treatment offered.

We are participating in a national multicenter study, known as “STEP-HI” (Starting a Testosterone and Exercise Program after Hip Injury) which explores the efficacy of testosterone combined with 6 months of exercise training on physical function in older women who suffered a hip fracture. The main objective of STEP-HI is to determine if the treatment can improve the distance walked in 6 minutes. Secondary measures include the analysis of bone mineral density, lean body mass and improvements in strength.

To participate in STEP-HI, volunteers must be women age 65 and older who have recently suffered a hip fracture, have lived either at home or in assisted living before the fracture, and do not have any significant memory loss. Eligible participants will be randomized into three groups: (1) an exercise plus testosterone gel group; (2) an exercise plus placebo gel group; or (3) a home-based exercise group. All participants will receive consultations with a dietitian, health information, and medical exams and will be provided transportation. In total, STEP-HI will recruit 300 participants who live in near the six clinical sites.
ASPIRIN IN REDUCING EVENTS IN THE ELDERLY (ASPREE)

Elena Volpi, MD, PhD, Sealy Center on Aging
Eloisa Martinez, BS, Sealy Center on Aging
Roxana Hirst, MS, Sealy Center on Aging
Summer Chapman, RN, MSN, Sealy Center on Aging

Objective: The primary objective was to determine whether low-dose aspirin prolongs life, or life free of dementia, or life free of significant, persistent physical disability in the healthy elderly. Secondary objectives related to the effects of low-dose aspirin on the key outcome areas of death, cardiovascular disease, dementia and cognitive decline, cancer, physical disability, depression and major bleeding episodes.

Methods: Participants were randomized remotely via the ASPREE Data Management Center web portal. For both systems, password protected access was required for study personnel. According to a computer-generated randomization schedule, participants were allocated to 100 mg enteric coated aspirin or placebo in a ratio of 1:1. Randomization were stratified for general practice in Australia, for regional site in the U.S. and for age (65-79 or 80 years). The initial 4 week run-in phase participants took placebo for compliance checking. Bayer Pharma AG supplied the active drug and matching placebo.

Results: The study did not find a significant difference between the aspirin and placebo groups on the primary outcome of survival free of persistent physical disability or dementia.

Conclusion: Based on these results, we know that for healthy people over the age of 70, like the ones enrolled in ASPREE, daily use of low-dose aspirin does not extend healthy life span.
SHARE YOUR SCIENCE

Sarah Toombs Smith, PhD, Sealy Center on Aging
Roxann Grover, MA, Sealy Center on Aging

Research Investigators in the Sealy Center on Aging are invited to Share Your Science. The internet is a useful tool for staying up to date on new findings and resources. It also provides an important means by which researchers can make their discoveries known and interact with peers and potential collaborators.

A new initiative of the Sealy Center on Aging (SCoA), Share Your Science, helps faculty share information and get noticed online. In this process, the researcher receives notification that their grant is funded or their paper published. Then, they send information to our email (aging.research@utmb.edu). We draft a press release for the researcher to approve. Once approved, information is sent to the SCoA monthly newsletter, posted to the SCoA website (www.utmb.edu/scoa), shared on Twitter (@UTMB_SCOA) and sent to UTMB Marketing and Communications, for possible dissemination through additional channels.

We can also forward to relevant organizations you identify, such as the Gerontological Society of America or the American Geriatrics Society. Social media and website metrics are used to gage your impact; help us increase your online presence.
11

Program Information

STATISTICAL HELP IS AVAILABLE, OFFICE OF BIOSTATISTICS (OBIOS)

Yong-Fang Kuo, PhD, Director

Faculty members:
Jacques Baillargeon, Kristofer Jennings, Daniel Jupiter, Heidi Spratt, Xiaoying Yu, & Dong Zhang

Staff:
Clark Andersen, Gwen Baillargeon, Winston Chan, Allen Haas, Shuang Li, Yu-Li Lin, Erica Lloreda, Jordan Westra, Wei Zhang, & Jie Zhou

The Office of Biostatistics (OBIOS) provides statistical support services to all UTMB faculty, staff and students. The areas of expertise include design support, database management and data analysis. Design support services include power calculations, sample size determinations, and identification of appropriate methods to minimize experimental error. Data management services include development of project specific systems for data acquisition, scheduling and modification, while data analysis services focus on the application of appropriate methods to allow valid statistical inferences. In addition, through long-term collaboration between a UTMB researcher and a member of the OBIOS, adaption and development on quantitative research will be conducted to maximize the information obtained from biomedical research. OBIOS is the point of contact for the computer software, including SAS® (a statistical application with extensive data management capabilities), nQuery Advisor® (a statistical application for sample size calculation and power analyses), and ArcGIS (a mapping and analytics platform). OBIOS maintains the Clinformatics DataMart, which contains the medical and pharmacy claims for approximately 56 million enrollees in one of the nation’s large commercial insurance company. This database offers numerous opportunities for researchers who are interested in population studies. OBIOS also provides Biostatistics, Epidemiology and Research Design (BERD) support to the Clinical Translational Science Award.
WHEY PROTEIN HYDROLYSATE AS A POTENTIAL NUTRITIONAL INTERVENTION TO INCREASE BLOOD AMINO ACIDS CONCENTRATION AND UPTAKE

Brenda Velarde, BS, Department of Nutrition & Metabolism
Camille Brightwell, MS, Department of Neuroscience and Cell Biology
Tatiana Moro, PhD, Sealy Center on Aging
Blake Rasmussen, PhD, Department of Nutrition & Metabolism

Background:
Protein supplementation can help preserve skeletal muscle mass and function in older adults. There are many forms of amino acids (AAs) that can be consumed. Both the source and degree of hydrolysis of dietary proteins are known to influence their absorption rate. Adequate AA availability within systemic circulation is important to promote muscle anabolic response and maintain muscle mass in young and older adults.

Purpose:
To investigate if a small dose of hydrolyzed form of whey protein (WPH) yields a greater or equal increase in plasma concentrations of amino acids after oral feeding versus consuming whole whey protein (WHEY, intact commercially available supplement).

Methods:
This double-blind, crossover, randomized control trial studied 10 young healthy male adults 20-35 years of age. Subjects consumed 0.08 grams of total protein per body weight (BW) of WHEY or WPH with a 4 – 6-week washout period. Frequent blood draws were taken at 1 hr pre and 3 hr post oral protein ingestion. Plasma AA concentrations of phenylalanine and the branch-chained AAs (BCAAs) leucine, isoleucine, and valine, were measured by using gas chromatography-mass spectrometry with an internal standard solution technique.

Results:
Plasma AAs concentration increased significantly after oral ingestion of both WHEY and WPH (p<0.05) and was similar between the two groups. AAs concentration reached their peak after 30 min from ingestion and remained elevated for 45-60 min.

Conclusions:
We conclude that 0.08 g/BW of WPH has a comparable effect as the intact protein source. WPH could be an appropriately targeted nutrition intervention to promote faster protein deliver, protein synthesis and lean muscle mass conservation in both young and older adults.
AN ACTIVE VIDEO GAME INTERVENTION AND
PHYSICAL FUNCTION IN BREAST CANCER SURVIVORS

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Background: Breast cancer survivors with functional limitations have a 40% higher mortality rate than those without functional limitations. Physical activity interventions are effective in improving physical function in this population; however, the use of active video games (AVGs) in improving function has not been widely studied.

Purpose: To investigate the impact of Pink Warrior, an AVG-based physical activity intervention, on physical function in breast cancer survivors.

Methods: This is a secondary analysis using data from a 14-week AVG-based physical activity intervention in female breast cancer survivors. 40 participants were randomized to the control group using pedometers and the existing UTMB breast cancer support group or to the intervention group including Wii Fit pedometers and participation in a weekly support group providing cancer survivorship lessons and AVG-based physical activity. An intent-to-treat analysis was used and One-way ANCOVA was conducted to determine statistically significant differences in mean total Short Physical Performance Battery (SPPB) scores and its sub-categories between groups.

Results: There were no significant differences between groups in age, BMI, race, treatment status, treatment type, hormone therapy, time since diagnosis, or self-reported peripheral neuropathy. The intervention group had a significantly higher mean SPPB score than did the control group (p=0.046). After analyzing SPPB sub-categories, differences in balance and chair stand scores were not significant; however, there was a significant difference in gait speed.

Conclusions: Implementation of Pink Warrior may help improve physical function in breast cancer survivors, mainly by improving gait speed. Our SPPB sub-category results may be due in part to a ceiling effect when using this tool. Future research is needed to assess the long-term effects of AVG-based physical activity interventions in breast cancer survivors.
NEGATIVE IMPLICATIONS OF CHRONIC KIDNEY DISEASE ON SKELETAL MUSCLE SATELLITE CELL AND CAPILLARY ABUNDANCE

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Our research explores the contribution of altered skeletal muscle physiology to deficits in physical function in patients with chronic kidney disease (CKD). Satellite cells, muscle stem cells, contribute to muscle plasticity and have been implicated in the prevention and/or acceleration of skeletal muscle decline, also seen during aging. In addition, capillaries function as a system to deliver oxygen and nutrients to muscle fibers and have been shown to be possible modulators of satellite cell activation. We are looking to further define the relationship of satellite cells to muscle degeneration, which could aid in finding therapeutic targets to mitigate functional decline in populations characterized by muscle wasting such as CKD and aging.

Skeletal muscle biopsies were collected from the vastus lateralis of CKD patients (n=10) and age-matched healthy, sedentary controls (n=10) from an ongoing prospective cohort. Biopsies were frozen and subsequently prepared for immunohistochemical analysis. Images were captured on an upright fluorescent microscope and data was extracted in a blinded manner. Group mean differences between control and CKD groups were compared using independent t-tests with significance set a p<0.05. Data is presented as mean ± SD.

Satellite cell abundance was decreased in subjects with CKD in type 1 and total fibers combined, but no significant difference was shown between groups in type 2 fibers. While the direct assessment of capillary density did not show a statistically significant difference in patients with CKD compared to controls, more direct measures of capillary-fiber perfusion indices did show reduced capillary contacts per muscle fiber size in CKD patients. These findings highlight morphological differences in patients with CKD and therapeutic potential of satellite cells to mitigate functional decline in this population.
CHRONIC EFFECTS OF RESISTANCE EXERCISE TRAINING ON RESTING BLOOD FLOW AND VASODILATION IN RESPONSE TO NUTRITION IN DIABETIC OLDER ADULTS

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The chronic effects of resistance exercise training (RET) on femoral blood flow are poorly studied, particularly in the older type 2 diabetic population. In this study, we recruited individuals with type 2 diabetes aged 60 to 85 for participation in a 12-week progressive RET program. Exercise sessions were supervised and occurred 3 times per week. Femoral blood flow was measured using Doppler ultrasonography at two time points: before RET initiation and 72-96 hours after the last RET bout. At each time point, femoral blood flow was measured at rest and after the administration of a 6.8g bolus of essential amino acids. Changes in femoral blood flow were calculated as percent change from baseline. Our preliminary results (n=4) indicate that progressive RET significantly increases resting femoral blood flow by 51.3% (P=.0002). The administration of the essential amino acid bolus was associated with a 17.3% decrease prior to RET program initiation. After completion of the RET program, this improved to a 48.4% increase in femoral blood flow in response to essential amino acid administration. These preliminary results suggest that, in an older population with type 2 diabetes, progressive RET is an effective method for improving resting blood flow and vasodilation in response to nutrition.

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ANTICONVULSANT USE ASSOCIATED WITH FALL AND FRACTURE IN ELDERS WITH DIABETIC PERIPHERAL NEUROPATHY.

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Background/Objectives: Peripheral neuropathy is a common diabetes complication that can increase fall risk. Regarding fall risk, the impact of pain management using anticonvulsants is unclear because these medications can also cause falls. This study investigates the impact of tricyclic antidepressants and gamma-aminobutyric acid analogs on fall and fracture risk in older diabetic peripheral neuropathy patients.

Design: Retrospective cohort study with 1-to-1 propensity matching of anticonvulsant users and non-users.

Setting: Study subjects come from a nationally representative 5% Medicare sample between the years 2008 and 2010.

Participants: Subjects were diagnosed with type 2 diabetes mellitus with neurological manifestations according to ICD-9 coding, and had complete parts A, B, and D Medicare enrollment. After applying all selection criteria, 5,550 patients with prescription and 22,200 patients without prescription of anticonvulsants were identified. Both patient groups were then stratified for fall history and matched based on propensity of receiving anticonvulsants within each group.

Measurements: Patients were followed until the first incidence of fall or the first incidence of fracture during the follow-up period (for up to 5 years).

Results: After matching, users and non-users were largely similar. After covariate adjustment, anticonvulsant use was associated with significantly increased fall risk (adjusted HR: 1.11, 95% CI 1.03-1.19) and a marginally significant increase in fracture risk (adjusted HR: 1.08, 95% CI 0.99-1.19). Results from treating anticonvulsant use as a time-dependent covariate were somewhat stronger (HR 1.26, 95% CI 1.17 to 1.36; and HR 1.12, 95% CI 1.02-1.24).

Conclusion: Anticonvulsant use is a potentially modifiable risk factor for falls and fractures in older patients with diabetic peripheral neuropathy.
INTERNATIONAL SPACE STATION CABIN CO2 AND BONE HEALTH

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Bone loss during space flight is a concern for the National Aeronautics and Space Administration. Cabin atmosphere on the International Space Station (ISS) contains about ten times more CO2 than outdoor ambient concentration on Earth. These CO2 levels could contribute to a mild subclinical respiratory acidosis. This could affect bone health, as a lower pH may increase bone resorption with the goal of releasing calcium to neutralize the acid. Older adults are at a higher risk of bone loss as well, and the results of this study may shed light on the impact of CO2 on markers of bone health within aging adults. The purpose of this study is to determine if cabin CO2 concentrations affect astronaut’s bone health.

The study population included 46 astronauts on four-to-six-month long ISS expeditions that took place between 2006-2017. Fasting blood and 24-hour urine samples were collected at flight day 15, 30, 60, 120, and 180. They were then analyzed for urinary N-Telopeptide (NTX), urinary calcium, and serum bone-specific alkaline phosphatase (BSAP). NTX is a bone-resorption biomarker, calcium is a marker of bone calcium balance, and BSAP is a bone-formation marker. CO2 data was obtained from gas analyzers on the ISS. Biomarker data and changes of each from their respective preflight value were compared to the CO2 averages on the day of the sample collection.

Higher concentrations of CO2 were associated with higher NTX and calcium levels.

Our preliminary results showed that higher levels of cabin CO2 could contribute to increased levels of bone resorption and bone calcium balance biomarker. This could indicate that higher CO2 promotes bone loss within the astronaut population; however, further research is needed.
MODERATE INTENSITY AEROBIC EXERCISE IMPROVES MUSCLE QUALITY IN OLDER ADULTS

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PURPOSE: Skeletal muscle atrophy and strength loss occur in aging via many biological mechanisms. Sarcopenia, the involuntary loss of muscle and strength, can progress to a clinically relevant decline in physical function. Resistance exercise training (RET) attenuates sarcopenia but may not be feasible for many older adults. Aerobic exercise training (AET) improves cardiopulmonary health; however, its effects on protein turnover, muscle mass, and strength are less clear. We aimed to determine if AET improves basal myofibrillar protein synthesis (MPS) and capillarization, promoting hypertrophy and strength. We hypothesized that AET improves muscle quality (strength per unit muscle mass) in conjunction with increased basal MPS and enhanced capillarization.

METHODS: Older adults were randomized to non-exercise (NON; n=11, 71.4 ± 4.18 y) or exercise (EX; n=12, 73.7 ± 4.05 y). EX completed 24 weeks of moderate intensity AET (walking 3x/week for 45 minutes at 70% heart rate reserve) while NON remained sedentary. A stable isotope tracer was infused after an overnight fast before and after 24 weeks. MPS and capillarization were analyzed from vastus lateralis muscle biopsies. Strength was measured via isokinetic dynamometry. Lean mass was determined with dual-energy X-ray absorptiometry (DXA). RESULTS: Basal MPS increased in EX (+50.7%, P=0.01) along with capillary density (+66.4%, P=0.03), peak oxygen consumption (+15.8%, P=0.01), quadriceps strength (+15.1%, P=0.01), and muscle quality defined as quadriceps peak torque divided by leg lean mass (+15.5%, P=0.01). Lean mass did not change in either group (P>0.05).

CONCLUSION: AET increases muscle protein turnover and capillarization in older adults, possibly to remove and replace damaged proteins, thus improving overall muscle quality. The improved muscle quality and strength following AET may mitigate the functional decline associated with sarcopenia.
A NOVEL INHIBITOR PROMOTES SATELLITE CELL ACTIVITY AND ENHANCES REGENERATION OF AGING SKELETAL MUSCLE AFTER INJURY

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Sarcopenia imposes deleterious effects on quality of life and longevity. In addition to progressive atrophy, older adults exhibit impaired regenerative capacity after muscular injury, further underwriting the sarcopenic decline into frailty. After injury, satellite cells (SCs) proliferate and differentiate to fusion-competent myoblasts, facilitating regeneration. However, SCs are dysregulated in aging, impairing muscle recovery; thus, regulators of SCs offer therapeutic targets for rehabilitation medicine. Nicotinamide N-methyltransferase (NNMT), a regulator of NAD+ biosynthesis, is overexpressed with aging. Elevated NNMT causes low NAD+ levels and reduced SIRT1 activity, promoting SC senescence. We have demonstrated in vitro that treatment with a novel NNMT inhibitor (NNMTi) enhances myogenesis, supporting our in vivo experiments and hypothesis that NNMTi rescues age-related deficits in SC activity to promote superior regeneration post-injury in aging muscle. 24-week old mice were pre-treated with a high NNMTi dose (10 mg/kg), low NNMTi dose (5 mg/kg), or saline for one week, followed by BaCl2 injury to tibialis anterior (TA). NNMTi treatment or saline was given during the recovery week post-injury, followed by in vivo measurement of contractile function and tissue collection. 5-ethyl-2'-deoxuryridine (EdU) was administered to analyze SC proliferation and fusion immunohistochemistry (IHC). Cross-sectional area (CSA) was also measured by IHC. SC proliferation and fusion were greater in NNMTi-treated mice. CSA was elevated by 35% in mice receiving the high NNMTi dose. Peak force was also enhanced in old mice treated with NNMTi. These results demonstrate enhanced regeneration of aged skeletal muscle via pharmacological manipulation of SC activity, supporting efficacy of this novel inhibitor. Ongoing studies will further elucidate the efficacy of NNMTi over longer recovery periods and as a tool to enhance overload-induced hypertrophy of aging muscle.
Introduction
Recent data from CDC showed that over 49,000 Americans died from opioid-related toxicity in 2017. A major contributor to this epidemic is the chronic use of prescription opioid for non-cancer pain, especially after a surgical procedure. Prior study showed that up to 7% of patients developed new-onset chronic opioid use after elective surgery. Given the high prevalence of degenerative spine disease (DSD) in geriatric patients, we describe patterns and predictors of opioid utilization after spinal surgery for DSD in geriatric patients.

Methods
In this retrospective cohort analysis of the national Medicare 5% database, we analyzed patients aged 66+ years with continuous coverage for one year prior to an index spinal operation for DSD-related diagnoses occurring in 2008-2014. All filled prescriptions for opioids were tracked post-operatively, and independent risk factors for continuing to fill prescriptions for opioids were determined using Cox-proportional hazard models – patients were censored from the analysis if they had trauma, died, or lost Medicare coverage.

Results
14,620 patients met inclusion criteria: 2,077 patients underwent anterior discectomy and fusion (ACDF), 536 underwent posterior cervical fusion (PCF), 2,699 underwent lumbar microdiscectomy, 1,848 underwent lumbar laminectomy, and 7,460 underwent lumbar fusion. Continued opioid utilization at one year post-operatively ranged from 14.6-21.4% of patients. In multivariable analyses, socioeconomic factors, prior opioid use, and lumbar fusion were associated with a significantly higher risk of chronic opioid utilization.

Conclusion
A significant proportion of geriatric patients continue to fill prescriptions for opioids for at least a year after spinal surgery for DSD. Understanding the factors that are associated with chronic opioid utilization may aid in patient selection when considering spinal surgery for a geriatric patient with DSD.
EFFECTIVENESS OF NON-VALIDATED SCREENING TOOL IN IDENTIFYING HOSPITALIZED OLDER ADULTS AT RISK FOR MALNUTRITION

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Background: Malnutrition affects up to 60% of hospitalized patients and is associated with adverse outcomes. Hospitals utilizing a validated screening tool to identify patients at risk for malnutrition have higher Registered Dietitian consult rates. Dietitians perform nutrition assessments for patients at risk for malnutrition, which are associated with improved patient health outcomes.

Objective: To determine the effectiveness of UTMB’s non-validated nutrition screening tool in identifying hospitalized patients at risk for malnutrition at admission when compared with the Subjective Global Assessment (SGA).

Methods: Data was collected from 191 older hospitalized adults in the MASS (IRB #13-038), PACE (IRB #14-0527), and GRAMS (IRB #16-0146) studies at UTMB. Nutritional status of participants was determined by SGA scores and dietitian consults. A chi-square test and Kappa statistic were performed to compare the differences in nutritional status based on the SGA and prevalence of dietitian consults.

Results: There was a significant difference in the number of patients identified as at risk for malnutrition between the SGA and dietitian consults generated. UTMB’s non-validated screening tool had a sensitivity of 31.1%. There was poor agreement between the SGA nutrition classification and the ordering of dietitian consults.

Conclusions: Dietitian consults missed 68.7% of patients that were classified as at risk for malnutrition based on the SGA. These findings warrant an improved and validated screening system to better identify hospitalized patients at risk for malnutrition. The results are not generalizable to the overall hospitalized population at UTMB due to the limited population analyzed. Further research must be conducted to improve the sensitivity of the nutrition screening tool.
BODY MASS INDEX RECOMMENDATIONS AND SARCOPENIA STATUS IN HOSPITALIZED OLDER ADULTS

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Background: According to the World Health Organization (WHO), a Body Mass Index (BMI) range of 18.5-24.9 kg/m² is associated with the lowest risk of morbidity and mortality for all adults. However, studies have consistently found that a higher BMI range of 24.0-30.9 kg/m² is more protective against all-cause mortality for adults 65 years and older. Older adults are susceptible to sarcopenia, a condition defined as progressive loss of muscle mass and function. Sarcopenia is associated with increased falls, poor clinical outcomes, and increased risk of hospitalization and death.

Objectives: Studies on sarcopenia prevalence and the clinical association of BMI in hospitalized patients in the United States are lacking. The objective of this study was to determine if a higher BMI range (24.0-30.9 kg/m²) is more protective against sarcopenia than the WHO-recommended BMI range (18.5-24.9 kg/m²) in older adults.

Methods: This study was performed in patients 65 years and older hospitalized at the University of Texas Medical Branch. Testing included an enrollment interview, physical function tests (hand grip, gait speed), and body composition measurements (DXA scan, height, weight). The European Working Group for Sarcopenia in Older People (EWGSOP) algorithm was used to determine sarcopenia prevalence.

Results: Sarcopenia prevalence was 24.3% with no difference between genders. The majority (62%) of those with sarcopenia were within the WHO-recommended BMI range. Participants within our hypothesized optimal BMI range (24.0-30.9 kg/m²) had a significantly lower prevalence of sarcopenia (P<.001).

Conclusions: A higher BMI range than currently recommended by the WHO may be more protective against sarcopenia in adults 65 and older. The adoption of a higher BMI range for older vs. younger adults by major health organizations may be indicated.
SEX DIFFERENCES IN THE ASSOCIATION BETWEEN PHYSICAL FUNCTION AND MALNUTRITION IN HOSPITALIZED OLDER ADULTS

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Background: Hand grip strength (HGS) has recently been included as a criterion for adult malnutrition as a marker of physical function. Specific cut points to indicate weakness in hospitalized older adults have not yet been established. Usual gait speed (UGS) is a well-known predictor of functional decline and mortality, with potential to have an association to malnutrition either alone or in combination with HGS.

Purpose: To evaluate associations of HGS, UGS, and a composite physical function score with malnutrition among hospitalized older adults.

Methods: This quantitative secondary analysis pooled data from three studies including hospitalized patients over the age of 65. Subjects (n = 186) having complete data for Subjective Global Assessment (SGA), HGS, and UGS were included in analysis. Data analysis included Spearman correlation, one-sample t-tests, independent t-tests and Pearson Chi-Square.

Results: On average, malnourished patients exhibited significantly weaker HGS and slower UGS when compared to well-nourished patients. However, sex-specific trends in strength were observed. Malnourished females exhibited significantly poorer functional outcomes in all categories of physical function compared to well-nourished females. There were no significant correlations or differences in physical function between malnourished and well-nourished males.

Conclusions: Malnourished males were less likely than malnourished females to demonstrate reduced physical function measures when compared to their well-nourished peers. Sex-specific differences in muscle strength are potentially clinically relevant when evaluating patients for malnutrition. Physical function may be a more appropriate indicator of malnutrition in females than in males. Further research is needed to establish sex-specific cut points for reduced physical function that correlate well with malnutrition in this patient population.
ADEQUACY OF PROTEIN CONSUMPTION 1-WEEK AND 4-WEEKS AFTER HOSPITAL DISCHARGE IN OLDER ADULTS

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Background/Purpose: Malnutrition, the state of under or over nutrition of calories, protein, and other nutrients, causes adverse effects in daily living and clinical outcomes. It is believed that the catabolic conditions in acute care (AC) accelerates the natural progression of muscle loss in aging, leading to an increase in prevalence of malnutrition in older adults post-discharge. However, nutritional intake and meal patterns of older adults post-discharge has not been well-established. Therefore, the aim was to determine the protein intake of older adult’s post-AC and to compare these findings to current recommendations.

Methods: We conducted secondary data analysis using data from a larger RCT (IRB #13-038). Participants were excluded from the analysis if they were rehospitalized or if recalls were incomplete. Guided food recalls were collected 1-week and 4-weeks post-discharge and were analyzed using ASA24, a validated 24-hour recall tool. Protein intake was averaged then compared to: current RDA, higher proposed recommendation, and per-meal recommendation. Regular and ideal body weight were used. For the statistical analysis, one sample t-tests were used to compare participant’s average intake to the recommendations.

Results: On average, participants met the current 0.8g/kg RDA for protein, yet protein consumption was significantly lower than the 1.2 g/kg recommendation. The 0.4g/kg per-meal recommendation was met 0%, 32%, and 47% at breakfast, lunch and dinner, respectively.

Conclusion: This study supports the hypothesis that older adults may not be consuming enough protein post-discharge to compensate for catabolic conditions experienced during hospitalization. Limitations of this study includes reliance on memory for recalls. Future studies need to be conducted comparing the prevalence of malnutrition on admission, discharge, and post-discharge and changes in prevalence with protein intervention.
CANNABIS LAWS AND OPIOID PRESCRIPTIONS AMONG PRIVATELY INSURED ADULTS

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Objective: To examine the association between opioid prescription patterns in privately insured adults and changes in state cannabis laws within four age categories (18-35 years, 36-45 years, 46-55 years and 56-65 years).

Methods: We conduct cross sectional analysis using data from 2016 and a longitudinal ecological analysis using data from 2009-2016 of opioid prescriptions, obtained from the Clinformatics Data Mart (CDM), among all adults aged 18-65 and four age groups based on cannabis laws strictness.

Results: We found significant association between age and presence of cannabis use legal infrastructure on rate of opioid prescriptions in the cross-sectional analyses. Age-stratified multilevel multivariable analysis reviewed lower opioid prescription rate in younger age groups only in states with medical cannabis laws [adjusted-aOR=0.82, in 18-35 and aOR=0.82 in 36-45, P < 0.0001 for both]. In the longitudinal analysis, there were decreases in opioid prescription rates in the post-law change period among the three younger age groups regardless of whether study states had witnessed a change in cannabis laws.

Conclusions: While opioid prescription rate appears to be lower in younger age groups in states with medical cannabis laws, it is unclear whether changes in cannabis laws have contributed to this as prescription rates have declined similarly in both states types among older adult age groups.
OUTCOMES OF ENDOSCOPIC RETROGRADE CHOLANGIOPANcreatography IN THE GERIATRIC POPULATION ON THIENOPYRIDINE THERAPY

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Introduction: Endoscopic Retrograde Cholangiopancreatography (ERCP) remains the endoscopic procedure with the highest risk for morbidity and mortality. The overall rate of complications is estimated to be between 5-10%. The most concerning complications after ERCP include: pancreatitis, cholangitis, bleeding, and perforation. Given these potentially serious complications, individuals undergoing this procedure are at an increased risk for readmission to the hospital after discharge compared to other endoscopic procedures. To further investigate this issue, we assessed outcomes of geriatric patients on thienopyridine therapy while undergoing an ERCP.

Methods: We conducted a descriptive, retrospective review of medical records to identify all patients at or above 65 years of age who received thienopyridine therapy within 5 days of an inpatient endoscopic sphincterotomy (ES) between December 2014 and June 2018. We set to determine rates of the following: post-procedural complications, 30 day readmission, and mortality.

Results: We identified 7 patients aged 65 and older (mean age 76) who underwent an inpatient ERCP with ES while on thienopyridine therapy. The indications for anti-platelet therapy were either coronary artery disease or prior cerebrovascular accident. The indications for ERCP were choledocholithiasis, cholangitis, and malignancy. None of the patients experienced post-procedural complications, including bleeding, or required readmission within 30 days. One patient was diagnosed with pancreatic cancer and died within 90 days while on hospice.

Conclusion: ERCP with ES is considered to be associated with a high risk of bleeding and post-procedural complications. Although our sample size is small, there were no post-procedural complications or 30 day readmission rates. No one experienced mortality directly related to the procedure. This suggests that ES can be safely performed in those who have recently received thienopyridine therapy.
MUSCLE FIBRE-SPECIFIC RESPONSE TO RESISTANCE EXERCISE TRAINING IN OLDER ADULTS

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Aging induces a physiological decline in human skeletal muscle function and morphology. A specific type II fiber atrophy and an overall switch to type I fiber occur with advancing age. This decline is also accompanied by a reduced capillary density and an increase in myocellular lipid infiltration.

Resistance exercise training (RET) has been identified as an effective strategy to overcome loss of muscle mass and improve strength. In the present study, we sought to determine the effect of RET on skeletal muscle fiber-type hypertrophic response in older adults.

Nineteen subjects (71.1±4.3 years) were studied before and after 12 weeks of RET. Immunohistochemical analysis was used to quantify myosin heavy chain (MyHC) isoform expression, cross-sectional area (CSA), satellite cells, lipid droplet infiltration, capillaries and myonuclear content.

RET induced a concomitant increase in MyHC type II fiber and a decrease in MyHC type I fiber frequency. Mean CSA significantly increased in MyHC type II fibers only (+23.3%). Myonuclear content increased in MyHC type I fibers, with no change in MyHC type II fibers. Satellite cell content slightly increased in both fiber types. Capillary density significantly increased with RET. In addition, a significant fiber type interaction was found in the distance between satellite cells and the nearest capillary: distance increased for type I and decreased for type II fibers. Lipid droplet density was higher in fiber type I, but decrease equally for both fiber types.

Our data suggest that fiber capillarization does not affect satellite cell activity after prolonged RET in older adults and provides intriguing evidence for a fiber-type specific response to RET. Indeed, hypertrophy of MyHC type II fibers seems to occur without detectable myonuclear addition.
Alzheimer’s disease (AD) is characterized by the accumulation of amyloid plaques and Neurofibrillary tangles (NFT) of hyperphosphorylated tau. Tau oligomers (TauO) are the most toxic species responsible for spreading of tau pathology. Passive immunotherapy targeting different tau species is the most promising approach. However, recent studies demonstrate that tau aggregates are diverse and may represent prion-like strains, displaying different conformations with distinct toxicity profiles. Thus, one antibody may not be sufficient for targeting all toxic tau oligomeric species.

The goal of this study is to investigate the potential of passive immunotherapy with different clones of Tau oligomer monoclonal antibodies (TOMAs), in two mouse models; hTau, overexpressing WT human Tau, and JNPL3, overexpressinge P301L mutant. Previous studies used middle aged mice, therefore it is critical to evaluate TauO passive immunotherapy in aged mice, since age is the main risk factor for neurodegenerative diseases and disease pathology changes with age.

Aged mice received a single injection of 120 µg/animal of different TOMA clones as well as non-specific IgG intravenously, and their cognitive and motor functions were assessed. Brain tissues were homogenized, and analyzed by biochemical assays, or cryosectioned and immunostained by immunohistochemical assays.

Our preliminary data suggest that certain TOMA clones differentially reverse some of the tauopathy-related cognitive and motor phenotypes in aged animals, parallel to a reduction in the levels of distinct toxic tau aggregates.

This is the first study testing tau passive immunotherapy in aged animals, and it validates the potential for TOMAs in reversing disease course. Moreover, this study suggests that multiple tau oligomeric strains exist in aged animals, therefore it is important to characterize these strains in aged mouse models and human tissues.
VACCINE CLINICAL TRIALS AND OLDER ADULTS

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Vaccines are especially important for older adults as they are more susceptible to infection due to aging of the immune system and medical conditions such as diabetes, heart and lung disease. As a result, older adults are more likely to get diseases like influenza, pneumonia, and shingles, and to have complications that can lead to long-term illness, hospitalization, and even death.

Unfortunately, the changes that make older people more likely to contract infectious diseases also reduce the effectiveness of vaccines. The addition of new or improved vaccines into the recommended schedule along with various strategies to enhance vaccine effectiveness, such as the use of adjuvants, administration of higher or more frequent doses, and novel administration methods, can provide increased protection against infectious disease in the older adult. Clinical trials, which include older adults, are required for all of these approaches to ensure the safety and efficacy of the vaccine for the specific target population(s), prior to licensure.

Vaccination protects against many infectious diseases and currently it is recommended that the elderly be vaccinated against influenza, Streptococcus pneumoniae and Varicella zoster (shingles).
SQUAMOUS CELL CARCINOMA OF FOOT OCCURRING IN A WART

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Background: Verrucous carcinoma is a rare form of low-grade squamous cell carcinoma that looks similar to a wart. Verrucous carcinoma can be seen in three areas of the body: the oropharynx, genitalia and feet. Verrucous carcinoma is mostly seen in males aged forty to sixty. The carcinoma rarely metastasize or recur post-treatment.

Case Report: We reported a case of a septuagenarian with unusual recurrence of squamous cell carcinoma (verrucous carcinoma) diagnosed within 6 months at the site of previous treatment. To our knowledge, this is the first report of recurrence of primary squamous cell carcinoma (verrucous carcinoma) of the foot. Unique features in our patient’s clinical presentation include his advanced age, being non-diabetic and the rapid recurrence of carcinoma.

Discussion: Verrucous carcinoma is mostly seen in middle-aged men, in their forties and fifties. When patients present to clinic with these lesions, they are frequently misdiagnosed as a wart or corn, leading the provider to treat the lesions with a topical cream for the presumed wart or corn. Patients with verrucous carcinoma rarely experience metastasis and their survival rates are excellent. The locations of most common occurrence for verrucous carcinoma are the sole and ball of the foot. As such, these lesions can go undetected for years due to the location especially when clinicians leave the feet unexamined. The carcinoma can also masquerade as other lesions leading the healthcare providers to diagnose the lesions as actinomycosis, verruca plantaris, pseudoepitheliomatous hyperplasia and plantar fibromatosis.

Conclusion and Message: This case highlights the need for vigilance as squamous cell carcinoma can be associated with a wart and can recur rapidly.
IMPROVING DELIRIUM RECOGNITION AND PREVENTION ON THE UTMB ACE UNIT: PRELIMINARY FINDINGS

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Background:
Delirium is a global disorder of cognition with an acute and fluctuating course. Aim is to identify frequency and accuracy of incident delirium in hospitalized ACE unit patients and feasibility of implementing a multidisciplinary program to reduce delirium risk based on their predisposition.

Project description:
Admissions between September 2017 and November 2017 were screened. Excluded were nongeriatric faculty patients and those with delirium on admission. 10 patients per month were evaluated in detail to determine the prevalence of predisposing and precipitating factors for delirium. Also nursing and physician documentation of incident delirium features, and actual diagnosis of delirium

Outcome:
30 patients were analyzed, average age was 81.8 years with 70% (female). Incident delirium was diagnosed in 3 (10%). All diagnosis of delirium was made by faculty. Residents documented behavioral change in all but no delirium diagnosis. Nurses failed to identify delirium in all cases. All were post-operative females with dehydration (BUN/Creatinine >18). 67% on psychoactive medication, hearing impairment, age above 90, and complicated course.

Conclusion:
After comprehensive chart review for incident cases of delirium in the UTMB ACE unit, we identified a 10% incident delirium rate. Which is within published incidence rates (6-56%). Diagnosis was difficult to extract and had to rely on faculty physician documentation which is time intensive. As such delirium recognition education for nurses and resident is needed for implementation of the preventative multidisciplinary intervention program. A computerized tool for identification risk factors is also being optimized for the multidisciplinary interventions moving forward.
TRANSIENT OMENTAL NODULARITY AND CECAL THICKENING IN SETTING OF ACUTE DIARRHEA, ABDOMINAL PAIN, AND ANEMIA

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Background:
Omental nodules occur in many conditions with non-specific presentations.

Case Presentation:
A 77-y.o. woman had 2 weeks hx of worsening weakness, 1 day of diarrhea, vomiting, and diffuse abdominal pain.
PMH: GI bleed 3 years prior due to ASA-induced duodenitis.

ROS: (-) for melena, hematochezia, and hematemesis

Exam: Obese woman, in no distress. Abdomen soft, nontender to palpation. No masses

Diagnostic: LA 3.3, WBC 17.9 (neutr 81%) and Hgb 7.8, MCV 76, ferritin 5, schistocytes.
CT abd/pelvis: trace ascites, splenic granulomas, omental nodularity in the RUQ and cecal thickening.
Colonoscopy: cecal polyp with tubular adenoma.
EGD: non-bleeding Cameron's erosion in a large hiatal hernia.
Paracentesis: no malignant cells.
CT-guided biopsy procedure was later canceled because CT: no nodularity and no ascites a week post-admission.
QFT-gold was negative.

Diagnosis: Enterocolitis (infectious), colonic polyps, Hiatal hernia with Cameron's erosion and anemia.
Patient received Levaquin IV for the colitis, and 2 units of blood and IV iron.
Diarrhea and abdominal pain and the omental nodularity - resolved.

Discussion:
The resolution of the omental nodule after one week was unexpected. The greater omentum contains gastroepiploic vessels, lymphatics, and accumulations of immune cells, predominantly macrophages.
The transient omental nodularity seen in this case can be caused by transient inflammatory processes such as enterocolitis and upregulated inflammatory response. Extrahepatic transient portal hypertension is frequently asymptomatic and therefore not recognized. Small ascites may be caused by increased splenic pressure (from bacterial translocation, endotoxemia, microthrombosis of PV branches), omental venous stasis/infarction, or lymphatic fluid accumulation. The case underscores consideration of infectious colitis as part of differentials of omental nodularity; this can prevent unneeded invasive testing and procedure.
EFFECTS OF COGNITIVE BEHAVIORAL THERAPY FOR INSOMNIA AND VASOMOTOR SYMPTOMS IN MENOPAUSAL WOMEN

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Introduction: Menopausal women with nocturnal hot flashes often report worse sleep quality and are more likely to meet criteria for insomnia disorder. Tailoring interventions to treat both insomnia and hot flashes may improve sleep and quality of life. There is some preliminary evidence suggesting cognitive behavioral therapy for insomnia (CBT-I) is also effective in ameliorating depressive symptoms. This pilot study is the first to examine the effects of CBT-I on insomnia and depressive symptoms among midlife women.

Methods: Forty women (mean age= 55±6.2) self-described as peri- or post-menopausal who reported ≥ 1 nocturnal hot flash/night and met diagnostic criteria for insomnia disorder were randomized CBT-I or menopause education control (MEC). Participants were not excluded if they had a comorbid diagnosis of major depression. CBT-I included four individual sessions over eight weeks focused on the treatment of insomnia and hot flashes. MEC included a 1-hour meeting to discuss menopausal symptoms and provide educational pamphlets. Pre- and posttreatment measures included: Insomnia Severity Index (ISI), Center for Epidemiologic Studies Depression Scale (CES-D), Hamilton Depression Rating Scale (HDRS), and sleep diaries.

Results: Mixed models revealed a significant time x treatment arm interaction for insomnia severity (p=.003), time awake after sleep onset (p=.005), sleep efficiency (p = .01), subjective depression (p=0.019) and objective depression (p=0.01). There was a significant main effect for time for all domains (p’s <.01) and for treatment arm for insomnia severity (p=.007).

Discussion: For midlife women experiencing insomnia and nocturnal hot flashes, a 4-session CBT intervention targeting both insomnia and hot flashes led to clinically meaningful improvements in sleep and depressive symptoms.
Severe burns result in profound skeletal muscle atrophy and weakness, major complications that hamper recovery from burn injury. Many factors contribute to the erosion of muscle mass following burn trauma, and we seek to define the abundance and phenotype of macrophages following a severe burn. Macrophages secrete cytokines in response to both tissue degradation and repair, causing a high degree of systemic inflammation. Macrophages exist on a continuum of pro–to anti-inflammatory phenotype with relatively polarized gene-expression. We refer to pro- and anti-inflammatory macrophages as M1 and M2, respectively. We have recently shown muscle stem cell activity peaks 14 days post burn injury, and muscle atrophy occurs concurrently. M2 macrophages have been shown to promote muscle stem cell differentiation and fusion, potentially contributing to the recovery of muscle after a burn. The cellular mechanisms underlying muscle recovery post-burn may help identify novel therapeutic targets to restore muscle mass and function in older adults.

In this quantitative experimental study, 8 week-old mice were randomized to sham (9 mice) or full thickness scald burn covering 30% of total body surface area. Mice were randomized for muscle collection at 7, 14, and 21 days post burn (n=10,10,9 mice/group). Spinotrapezius muscles were excised and analyzed for macrophage abundance, in addition to other morphological outcomes.

We report greatest abundance of M2 macrophage at 14 days following acute burn injury. No significant changes in M1 macrophage density were observed at any point post-burn.

These results coincide with previous findings showing peak satellite cell proliferation and muscle regeneration at 2 weeks post burn, suggesting coordinated action of satellite cells and M2 macrophages in the restoration of atrophied muscle post burn.
HIGH-THROUGHPUT SCREENING TO IDENTIFY NEUROINFLAMMATORY MEDIATORS OF ION CHANNEL DYSFUNCTION

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Neuronal firing is a highly regulated process that depends on the integrity of voltage-gated Na+ (Nav) channel complexes, which in turn rely on the stability of cellular signaling networks. In neurodegenerative states including Alzheimer's Disease (AD), the neuronal cellular milieu is skewed away from growth and toward pro-inflammatory mediators. The resulting changes in neuronal firing may arise from pathological phosphorylation events at the Nav channel macromolecular complex. This complex is comprised of accessory proteins including fibroblast growth factor 14 (FGF14), which we have previously demonstrated affects the biophysical properties of Nav1.6 through a glycogen synthase kinase 3 (GSK3)-dependent manner. Using the split-luciferase complementation assay (LCA) to reconstitute the FGF14:Nav1.6 complex in cells, we observed that tumor necrosis factor-α (TNF-α), a cytokine which has been shown to modulate Nav1.6 firing, significantly enhances FGF14:Nav1.6 complex formation (156%) at concentrations as low as 50 pg/mL. Thus, here we posited that TNF-α may regulate FGF14 interactions with Nav1.6 through Ser/Thr and/or Tyr phosphorylation events downstream of the TNF receptor. To test this hypothesis, we have adapted the LCA for a high-throughput drug screening to search for kinases activated by TNF-α signaling that may control the formation of this complex. We screened >3,000 kinase inhibitors, and hits were selected based on counter-screening, toxicity, and dose-response relationships. Our results may indicate that TNF-α regulates the Nav1.6 complex through activation of tyrosine kinases that converge on GSK3 and FGF14. Specifically, we have identified the JAK2 and Src tyrosine kinases as regulators of the Nav complex. Altogether, these studies identify new determinants of Nav complex regulation that might serve as a base for therapeutic development.
SKELETAL MUSCLE-SPECIFIC DEPLETION OF DEPDC5 ACTIVATES mTORC1 SIGNALING, BUT DOES NOT MITIGATE MUSCLE ATROPHY

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Background: mTORC1 (mechanistic target of rapamycin complex 1) is a master regulator of protein synthesis in the body, particularly in skeletal muscle. Recent research has highlighted perturbations in mTORC1 signaling in older adults that may contribute to onset of sarcopenia. With limited amino acid (AA) availability, such as during an extended fast, mTORC1 activity is downregulated, resulting in decreased protein anabolism. DEPDC5 (DEP Domain Containing 5), an upstream regulator of mTORC1, downregulates mTORC1 during limited AA availability.

Purpose: We sought to determine if muscle atrophy can be diminished in the absence of DEPDC5. The overarching goal is identifying key cellular transducers that regulate muscle atrophy as future disease therapy targets.

Methods: We created transgenic mice, in which DEPDC5 was conditionally depleted in skeletal muscle. DEPDC5-conditional knockout (DEPDC5 cKO) mice were compared to wild type (WT; n=7/group) control mice to determine the role of DEPDC5 in regulating skeletal muscle atrophy following 24-hours of food deprivation. Following food deprivation, muscles were harvested and frozen. 7 μm cross-sections were prepared and imaged to determine fiber type frequency (FTF) and cross-sectional area (CSA). Two-tailed t-tests compared CSA and FTF. A two-way ANOVA compared body mass change between groups.

Results: We observed significant differences in body weights in both groups following food deprivation, but not between groups. We observed no significant difference in FTF and CSA between DEPDC cKO and WT.

Conclusions: Skeletal muscle atrophy was not diminished in DEPDC cKO mice compared to WT. Limitations include a small sample size and lack of pre-food deprivation muscle samples. Future research may focus on relative loss of body stores of fat and muscle mass or other cellular transducers regulating muscle anabolism.
DECREASED SYNAPTIC INSULIN RESPONSIVENESS IN THE HIPPOCAMPUS AFTER TRAUMATIC BRAIN INJURY: RELEVANCE TO ALZHEIMER’S DISEASE AND THERAPEUTIC IMPLICATIONS

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Traumatic brain injury (TBI) is a risk factor for the later development of Alzheimer’s disease (AD), although the mechanisms contributing to this increased risk are unknown. Insulin resistance is an additional risk factor for AD whereby decreased insulin signaling increases synaptic sensitivity to amyloid beta (Aβ) and tau thus contributing to the cognitive decline that characterizes this neurodegenerative disorder. Considering this in coordination with the frequent report of hyperglycemia after TBI, we decided to look at whether decreased insulin responsiveness in TBI animals is playing a role in the synaptic vulnerability to AD pathology.

We analyzed synaptosomal insulin responsiveness in the hippocampi of SHAM and TBI animals that underwent a lateral fluid percussion injury at acute (2 and 7 days post-injury), intermediate (28 days post-injury), and chronic (3 months post-injury) time-points. We were able to detect acute and chronic decreases in insulin responsiveness in the brain of rats after TBI. In addition to completing both Aβ as well as tau binding experiments, we performed electrophysiology at the intermediate and chronic time-points to assess the dysfunctional impact of Aβ and tau oligomers as well as the protective effect of insulin. We found no difference in binding or degree of LTP inhibition by either Aβ or tau oligomers between SHAM and TBI animals at either time points. However, insulin treatment was able to block LTP inhibition in SHAM animals but not in TBI animals. Since insulin treatment has been discussed as a therapy for AD, this gives valuable insight into therapeutic implications of treating AD patients based on prior history of associated risk factors.
MODULATION OF NEUROTOXIC AMYLOID BETA OLIGOMERS: A ROLE FOR HSP60

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Alzheimer’s disease (AD) is the most common form of dementia worldwide, affecting more than 40 million individuals. Due to the complexity of this pathology, the design of disease-modifying therapies has been so far unsuccessful. Among all the hypotheses suggesting possible mechanisms involved in AD, the pro-amyloidogenic processing of amyloid precursor protein (APP), upstream of the β-amyloid peptide (Aβ) formation and subsequent neurotoxic oligomerization (Aβo), remains one of the most supported theories. Further, impairment of the protein quality control machinery due to aging, along with increased misfolded proteins during AD progression is another alteration characterizing the disease. Particularly, evidence suggests that age-related impairments of chaperones, modulatory proteins involved in cell protection, contributes to the Aβo-induced neurotoxicity, but the underlying mechanism remains unresolved. In the present work, we characterized the protective effect of Hsp60 chaperone against toxic Aβo using cell free, in vitro and ex vivo approaches. Specifically, 7PA2 cell line, a model of human Aβo production, was used to investigate the effect of Hsp60 overexpression on Aβ production and release using ELISA, western blotting and immunocytochemistry. Further, we investigated changes in cytotoxicity of Aβo in vitro and changes in long term potentiation ex vivo. Finally, we used a cell free approach to characterize the effect on Hsp60 on toxic Aβ conformations by testing changes in the biophysical properties of treated oligomers using immunoprecipitation, proteinase K assay, western blotting and spectroscopy techniques. Our data suggest that Hsp60 has a direct effect on the neurotoxicity of Aβo resulting in a reduction of cytotoxicity and a rescue of synaptic plasticity, thus proposing Hsp60 as a potential candidate for future therapies targeting Aβo neurotoxicity. Support: NIH 1R01AG042890 to GT
EPIGENETIC MODULATION OF SYNAPTIC RESILIENCE IN ALZHEIMER’S DISEASE

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Alzheimer’s Disease (AD), the sixth leading cause of death in the US and most common form of age associated dementia, is accompanied by synaptic loss (at early stages) and neuronal death (at late stages). Amyloid beta (Abeta) and tau oligomers (toxic species of two hallmark proteins in AD) can target and disrupt synapses thus driving cognitive decay. Non-Demented individuals with Alzheimer’s Neuropathology (NDAN) are capable of withstanding Abeta and tau toxicity, thus remaining cognitively intact despite presence of AD neuropathology. Understanding involved mechanism(s) would lead to development of novel effective therapeutic strategies aimed at promoting synaptic resilience to amyloid toxicity. Hippocampal postsynaptic proteome of AD, NDAN and control individuals revealed 31 proteins that are significantly different in AD vs. NDAN. Potential drivers of these changes, miRNA-485, -4723 and -149, predicted by IngenuityPathwayAnalysis, were experimentally confirmed to be differentially expressed in AD and NDAN vs. control. We hypothesized that changes in these miRNAs play an important role in either promoting synaptic resistance, or sensitization to Abeta oligomers binding. We used an in vivo model to determine if modulation of these miRNAs can affect the ability of Abeta oligomers to associate with synaptic elements. Synaptosomes were prepared from wild-type mice 24 hours after intracerebroventricular injection of miRNAs, and Abeta binding was evaluated using flow cytometry. We found that in vivo modulation of miRNA-4723, -485 and -149 levels significantly decreased Abeta binding to the synapses in mice. Our findings suggest that miRNA regulation and homeostasis are crucial for Abeta interaction with synaptic terminals, and strongly suggest that, in NDAN individuals, a unique epigenetic profile could be driving synaptic resistance to Abeta toxicity, thus contributing to preserved cognitive abilities.
ADIPOSE TISSUE-TARGETED STEM CELL TRANSPLANTATION FOR INSULIN RESISTANCE-RELATED CNS DYSFUNCTION

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Type 2 Diabetes Mellitus (T2DM) is a main risk factor for the development of Alzheimer’s Disease (AD). Compelling epidemiological evidence demonstrated that AD and insulin resistance (hallmark of T2DM) are linked, although the underlying mechanisms remain uncertain. Insulin resistance has been demonstrated in brain of AD patients, where it might be prodromal to neurodegeneration. In the CNS, especially in areas associated with cognitive function such as the hippocampus, insulin is crucial for memory and learning. High-caloric diets may lead to adipose tissue (AT)-insulin resistance, resulting in fatty acid spillover and ectopic fat deposition. Notably, high levels of FFA have been reported in AD patients; likewise, rodents fed a high-fat diet display peripheral insulin resistance, hippocampal synaptic deficiencies with reduced insulin signaling and memory deficits. These observations indicate that AT dysfunction directly impinges on CNS function, thus suggesting that improving peripheral insulin sensitivity may also improve associated memory deficits. Furthermore, the number of mesenchymal stem cells (MSC) within the AT in patients with insulin resistance and T2D is significantly reduced, which suggests that replenishing deficient MSC in the AT may successfully halt/reverse insulin resistance and its related CNS deficiencies. With this ultimate goal in mind, we investigated the effect of a transplant of Wharton’s jelly-derived mesenchymal stem cells (WJ-MSC) directly in AT in restoring insulin sensitivity in both periphery and brain in insulin-resistant high-fat fed mice. Our results show that after MSC transplantation there is improvement of hyperglycemia and synaptic plasticity as evidenced by amelioration of long-term potentiation. Collectively, the present data suggest that re-establishing AT insulin sensitivity via peripheral transplantation of MSC could be a viable therapeutic strategy to correct insulin resistance-associated CNS deficits.
CHARACTERIZATION OF DRUSEN DEPOSITS FOR IMMUNOTHERAPY IN DRY AGE-RELATED MACULAR DEGENERATION

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Age-related macular degeneration (AMD) is the leading cause of blindness among the elderly in developed nations. A subtype of AMD called Dry AMD is characterized by the presence of insoluble extracellular deposits called drusen in the macular region. These pathological drusen deposits are the clinical hallmark of AMD and are known to set the stage for progression of retinal pigment epithelium degeneration and subsequent vision loss. Unfortunately, dry AMD constitutes 90% of all AMD cases and yet there are no available treatments as the pathogenesis of dry AMD – particularly, the early scaffolding of drusen formation remains elusive. In our study we show immunohistological characterization of the drusen molecule from human donor eyes and observed novel differences in the fatty acid profiles of a dry AMD. Drusen staining showed presence of complex polysaccharides, glycoproteins, lipids and possible tau protein. Fatty acid profiles of drusen rich retinas showed abundant peaks of Linoleic acid, alpha linolenic acid, and especially oleic acid when compared to the control retina. Observation from our study will provide information in understanding the pathogenesis of drusen and better understanding of dry AMD disease process.
CHRONIC INHIBITION OF PHOSPHOLIPASE D1 OVEREXPRESSION USING SMALL MOLECULE INHIBITORS PREVENTS SYNAPTIC DYSFUNCTION AND MEMORY DEFICITS IN A MOUSE MODEL OF ALZHEIMER’S DISEASE

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Alzheimer’s disease (AD) is the most common form of dementia and the 6th leading cause of death in America for which there is no resolving cure. While diagnosed later in life, initial disease events occur decades earlier. Among these early events, we have reported earlier dysregulation of phospholipase D1 (PLD1) expression contributing to synaptic dysfunction and underlying memory deficits. Synaptic expression of PLD1, an inducible isoform, was elevated in AD hippocampi compared to age-matched controls. PLD1 signaling mechanisms include membrane trafficking, cytoskeletal reorganization and autophagy, all of which could play an important role in synaptic integrity. Our previous studies have demonstrated that PLD is a convergent second messenger for dopaminergic, serotonergic and glutamatergic neurotransmission, and affects pre- and post-synaptic function.

Recently, our functional studies using a mouse model, 3XTg-AD, of AD-like memory deficits and synaptic dysfunction highlighted the importance of PLD1 signaling in mediating the synaptic vulnerability thus making the synapses susceptible to amyloidogenic protein insults. We also studied potential signaling partners such as mechanical target of rapamycin (mTOR), protein kinase C alpha (PKCa) and coflin that are known signaling partners for PLD1 isoform and have a role in synaptic neurotransmission deficits associated with AD. Due to the availability of well-tolerated PLD1 small molecule inhibitors that we and others have characterized before, we tested acute and chronic treatment in aged 3XTg-AD mice. Both synaptic (electrophysiology) and memory (behavior) were improved following chronic treatment, suggesting that PLD1-mediated synaptic vulnerability plays a crucial role in AD and related dementia.

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NURSE PRACTITIONER INVOLVEMENT IN MEDICARE ACCOUNTABLE CARE ORGANIZATION: IMPACT ON QUALITY OF CARE

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OBJECTIVE
Evidence showed that Nurse Practitioners (NP) improve processes of care for elders with chronic diseases, but it is unclear how NP participation in Medicare Accountable Care Organizations (ACOs) affects quality of care for ACO enrollees. We thus examined the 3-year trend (2014-2016) and outcomes of NP’s involvement in ACOs.

METHODS
Our study focused on ACOs in Medicare Shared Savings Program (MSSP). We used data from ACO provider and beneficiaries’ files, Medicare provider/outpatient claims, and ACO 2014-2016 performance data. Three levels of NPs’ scope of practice/prescribing (independent practice/prescriptions, independent practice, and requiring physician supervision) were determined using publicly available data. For each ACO, we calculated FTE (from Evaluation and Management services) per 10,000 beneficiaries for MD-PCPs and for NPs separately. Data was analyzed for ACO characteristics and care quality/medical utilization measures, stratified by tertiles of NP involvement. Three different generalized estimating equation models (with incremental adjustments for patients, providers and ACO factors) were used to examine the association between NP involvement and care quality/medical utilization measures.

RESULTS
MSSP ACOs increased from 331 in 2014 to 432 in 2016, mostly in rural areas. NPs’ involvement increased more substantially than MDs’ during the period. NP involvement was the highest in larger ACOs, rural areas, and states with unrestricted NP practice regulations. Greater NP involvement was associated with fewer readmissions and higher scores on measures of preventive care, chronic disease management, and medication management. Higher NP involvement was associated with fewer MD services, more non-MD services, and more outpatient emergency department visits.

CONCLUSIONS
Higher NP involvement in ACOs was associated with improvement in some quality of care measures but with an increase in emergency department visits.
ASSESSMENT OF INTERPROFESSIONAL COMMUNICATION IN LIMA, PERU

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Background: Interprofessional relationships are important for patient care. The purpose was to determine whether the understanding of medical professions was increased by students attending a mission trip to Lima, Peru. Our hypothesis is students will have limited knowledge before the trip but will gain understanding of other professions at trip’s conclusion. Secondary objectives included: gain of communication skills and factors contributing to patient safety.

Methods: A mixed qualitative and quantitative survey with semi-structured and free-response questions were emailed with a 10-day deadline. The setting was a general care clinic in Lima. The participants were 28 medical, occupational therapy, physical therapy, or nursing students from University of Texas Medical Branch. Additionally, one undergraduate student and one Registered Nurse were eligible.

Results: Quantitative: 50% of participants completed the survey. By discipline, 2 medicine, 5 nursing, 4 physical therapy, 3 occupational therapy, and 1 undergraduate students. By year, 4 first, 2 second, 2 third, and 6 fourth years with one healthcare professional. Prior to trip, 8 students understood the roles of other disciplines while 7 did not. 100% of participants stated gain in communication skills and understanding of other disciplines.

Qualitative: Prior to trip, knowledge gaps were roles of occupational therapy and all medical disciplines in general. A holistic approach via collaboration with native translators were key to patient safety. With communication problems, participants stated communicating respectfully would resolve issues.

Conclusions: Regardless of training, there were knowledge gaps of the various professions. Professional language can solve issues that arise in healthcare. Early exposure to other disciplines can increase knowledge of a healthcare team. Language and culture barriers can be lessened if knowledge of native culture can be obtained.
BREAST CANCER DIAGNOSIS AND PHYSICAL FUNCTION

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Background/Purpose: Studies evaluating physical function in breast cancer survivors rely on self-reported data, which is not reliable due to the commonality of over and under reporting. These data are often compared to a reference range, rather than a sampled population. Therefore, we aimed to evaluate the effect of breast cancer diagnosis on objective physical function measures and the factors that are associated with function of adults over 40.

Methods: Our study used data collected from four studies that had participants perform a fitness test at baseline. Females aged 40 and older were included. An independent sample t-test was used to evaluate differences in physical function among those with (n=95) and without (n=65) cancer. A multivariable linear regression was conducted to evaluate factors associated with physical function.

Results: The final model showed significant group differences between those with breast cancer (56.4+/−8.8 years; BMI 32+/−5.6kg/m2) and those without (62+/−5.3 years; BMI 30.7+/−3.4kg/m2) and arm curls. BMI was negatively associated with chair stand, back scratch, and 8-foot up and go performance. A cancer diagnosis was also negatively associated with 8-foot up and go performance, and age was associated with back scratch performance.

Conclusions: The multivariable linear model suggested an association between increased BMI and decreased lower body strength, upper body flexibility, and agility. An increase in age showed a significant decrease in upper body flexibility, which contributes to difficulties in activities of daily living. Fitness tests can be performed to identify people with lower upper body strength and an increased risk of mortality. The significant association between a cancer diagnosis and agility may increase fall risk factors, warranting further investigation regarding agility and breast cancer survivors fall risk.
CHONDROSARCOMA IN THE ELDERLY: COMPARING OUTCOMES OF LIMB-SALVAGE SURGERY AND LIMB AMPUTATION

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Background:
Chondrosarcoma (CHS), a primary bone malignancy characterized by cartilaginous matrix secretion, often occurs within osseous sites of the limbs. Older adults carry an increased risk of developing this cancer. Medical management often involves surgical resection of the tumor with limb-salvage surgery (LSS). In cases where LSS is contraindicated, limb amputation (LA) is alternatively performed.

Objective:
Compare all-cause mortality risk between LSS and LA in CHS patients over 60 years old.

Methods:
Patients with primary CHS over the age of 60, who underwent LSS or LA from the Surveillance, Epidemiology, and End Results registry between 1995-2015 were examined. Clinicopathologic variables were compared using Pearson chi-square/Fisher exact test, and survival analyses were conducted using Kaplan-Meier log rank test and cox hazard model.

Results:
291 chondrosarcoma cases were evaluated. The average age of the cohort was 70.7 years, and average follow-up time was 53.8 months. 226 LSS, and 65 limb amputations were performed. Surgery type varied significantly by age-group (p = .024). Mean survival time for LSS was 111.30 months, and 66.65 months for amputation. Overall survival distributions for the two groups varied significantly via log rank test (p < .005). Unadjusted cox regression displayed an increased overall mortality-risk with amputation (HR, 1.65; p = .005). When adjusted for age, sex, race, primary site, and grade overall mortality-risk did not significantly differ.

Conclusion:
Whereas individuals who receive LA carry an increase in all-cause mortality risk compared to LSS, the increased risk can not be attributed to the surgical procedure alone. True prognosis in the elderly relies on a multitude of factors and cannot be gauged unilaterally by the use of LSS or LA.
HYPOGONADISM, TESTOSTERONE REPLACEMENT THERAPY AND RISK OF DEPRESSION IN MIDDLE AGED AND OLDER MEN

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Testosterone replacement therapy (TRT) prescription rates have increased by over three-fold for middle aged and older men in the past decade. Limited evidence from randomized controlled trials suggests that TRT may improve depression in hypogonadal (testosterone deficient) men. However, evidence from real world, population-based studies is lacking. We conducted a case control study to examine the risk of depression associated with a) hypogonadism and b) exposure to TRT in a large, nationally representative cohort of middle aged and older men. This study used data from Clinformatics DataMart—one of the nation’s largest commercial health insurance programs. Conditional logistic regression analysis was used to calculate adjusted odds ratios (ORs) and 95% CIs for risk of depression. Hypogonadism was associated with 15% increased risk of depression (OR=1.15; 95%CI=1.01-1.31). No association was observed between TRT and depression (OR=0.99; 95%CI=0.87-1.12). The observed association between hypogonadism and depression is consistent with current literature. Contrary to limited evidence from prior RCTs, we failed to observe an association between TRT and depression. To the best of our knowledge, this is the first study to examine the risk of depression associated with exposure to TRT in a nationally representative sample of middle aged and older hypogonadal men and one of the few large scale, observational studies to examine the risk of depression associated with hypogonadism. Our results should be interpreted in light of potential selection bias, given study design. This study will improve current understanding of the link between hypogonadism, TRT and depression in middle aged and older men. Findings from the study will help both patients and physicians in making an informed decision regarding initiating TRT for potential mental health benefits.
PROLONGED OPIOID PRESCRIPTIONS IN OLDER CANCER SURVIVORS: A RETROSPECTIVE COHORT STUDY

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OBJECTIVES: To examine the rates and predictors of prolonged opioid prescriptions in older cancer survivors

DESIGN: Retrospective cohort study.

SETTING: Texas, United States.

PARTICIPANTS: Cancer survivors (≥5 years post-cancer diagnosis) diagnosed from 1995 to 2008

MEASUREMENTS: We used Medicare Part D event data to calculate the proportion of cancer survivors with a prolonged opioid prescription (≥90-day supply of opioids/year). Adjusted odds ratios were calculated to identify predictors of receiving a prescription. All analyses were repeated with a sub-cohort of opioid naïve cancer survivors identified from the primary cohort of all cancer survivors.

RESULTS: From the fifth year to the eighteenth year after cancer diagnosis, the prolonged opioid prescription rate remained relatively stable for all survivors (about 12-13%) and increased from 1.4% to 7.1% for opioid naïve survivors. Cancer survivors diagnosed from 2004 to 2008 had higher rates of prolonged opioid prescription compared to those diagnosed from 1995 to 1999 and from 2000 to 2004. The number of years since diagnosis, a later year of diagnosis, female gender, urban location, lung cancer diagnosis, disability as the reason for Medicare entitlement, Medicaid eligibility, ≥1 comorbidity, and a history of depression, alcohol abuse, or drug abuse were independent predictors of receiving a prolonged opioid prescription. The strongest negative predictor of receiving a prescription was opioid naïvety, contributing a nearly ninefold lower odds of receiving a prescription.

CONCLUSION: The rates of prolonged opioid prescribing for older cancer survivors remained high many years after cancer diagnosis. The predictors of prescribing identified in our study can guide the development of clinical guidelines and public policy to ensure safe and adequate pain treatment for the growing number of older cancer survivors.
EVALUATION OF EARLY HOSPITAL FOLLOW-UP USING A HOUSE CALL PROGRAM ON READMISSION TO THE ACE UNIT

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Approximately 2.6 million seniors over the age of 65 are readmitted within 30 days of hospital discharge, which constitutes nearly 1 in 5 Medicare beneficiaries in the U.S. (CMS, 2017). Recent data in UTMB’s Vizient database show readmission rates for geriatric patients discharged from the ACE unit consistently above the 11.88% target range. The most recent values climbing from 17.65% in May 2018 to 22.37% by the end of June 2018. Many of the geriatric patients are complex, have multiple conditions, and often face difficulty accessing care after hospital discharge due to disabilities. The aim of this scholarly practice project is to reduce 30-day readmissions for high-risk, homebound patients age 65 and older discharged from UTMB’s ACE unit by 10% utilizing the UTMB House Call program by December 31, 2018. Evidence will be presented on the effectiveness of transitional home visit programs in improving access to care, reducing readmission rates, and preventing exacerbation or complication due to illness (Low et al., 2015). Methods used in the project to identify high risk for readmission patients include the 8P’s tool and the high-risk patient dashboard located in the EPIC system. Further identification of patients also includes: collaboration with case managers, inpatient physician teams, and community partners. Measures consist of monthly readmission rates for July 2018 through December 2018 utilizing data collected from Vizient and Readmission Explorer and a comparison of the number of patients followed post hospital discharge that were readmitted versus those that were not followed. Expected outcomes of the project include: readmission rate reduction, positive impact on patient welfare, and proof of financial viability of the house call program for reducing readmissions.
THE STATE OF ADVANCE CARE PLANNING AT UTMB: PRELIMINARY QUALITATIVE INTERVIEWING

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Background: Advance Care Planning (ACP) is the iterative process of defining preferences for care and a decision maker for times when an individual does not have capacity to make medical decisions. ACP is important for elderly patients approaching the end of life, because it can improve provider adherence to patient preferences, decrease heroic efforts, increase hospice services, and decrease ICU admissions. The ACP documentation and billing process is complex and prone to variation. Consistent documentation is necessary to facilitate informed decision making in times of need.

Methods: We used a mixed methods design to understand barriers to ACP. First, data was obtained from UTMB Electronic Medical Record chart reviews for billing codes (CPT codes 99497/99498). Second, qualitative interviews were conducted with providers about ACP.

Results: EPIC chart reviews indicated low utilization of ACP codes. In the last 12 months, codes were used for 2.3% of Geriatric clinic patients (67/2,928) and 18.6% for Hospice and Palliative Medicine patients (51/274). Provider interviews demonstrated consistent understanding of the purpose and components of ACP. All mentioned designating a decision maker, completing advance directives, and initiating discussions about preferences for care in terminally ill patients. Interviews also indicated documentation in the EMR is inconsistent and variable. Twelve unique EMR fields for documentation were reported; the top three were: the FYI section, clinical encounter notes, and the problem list.

Conclusion: Findings from this investigation demonstrate good understanding of the purpose and components of ACP among UTMB providers. However, the findings also highlight inconsistencies in documentation of ACP discussions in the EMR. Follow-up studies will utilize additional qualitative interviews and a provider survey to better understand barriers to ACP discussion and documentation.
DO STATINS REALLY CAUSE MUSCLE SYMPTOMS? A META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS OF STATIN THERAPY

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PROBLEM: Although statin use may be accompanied with cautions about statin-associated muscle symptoms (SAMS), it is unclear if statins cause SAMS.

OBJECTIVE: To test whether statin treatment causes increased incidence in SAMS.

METHODS: The Cholesterol Treatment Trialists’ (CTT) 29 RCTs were selected for study, as all were high quality and followed >1,000 patients for 2+ years. Two raters coded original articles for patient-reported muscle symptoms, rhabdomyolysis, and elevated creatine kinase (CK>10x ULN) outcomes. Relative risks (RR) were pooled by outcome and tested for homogeneity (I^2).

RESULTS: Statin-treated patients reported a 3% non-significant increase in symptoms compared to placebo controls (RR=1.03, 95% CI:1.00,1.06, 16 studies, n=97,646, I^2=2%). Incidence of rhabdomyolysis showed a 26% non-significant increase in statin-treated patients when compared to placebo controls (RR=1.26, 95% CI: 0.64,2.45, 16 studies, n=99,303, I^2=0%) Incidence of elevated CK had a 6% non-significant difference between statin and placebo-treated patients (RR=1.06, 95% CI: 0.72,1.57, 12 studies, n=69,385, I^2=17%). A sub-analysis of elevated CK in studies with high statin doses (>=40 mg) showed a non-significant 38% increase in elevated CK (RR=1.38, CI: 0.89, 2.15, 8 studies, n=52,449, I^2=0%).

CONCLUSION: Statin treatment does not appear to cause an increase in muscle symptoms, although high doses may cause muscle damage and/or inflammation as evidenced by CK elevations. Although the RCTs included almost 100,000 patients, a larger number of trials/patients may be necessary to determine whether adverse events are due to statins, a particular statin, or statin dose.
FOOD BOLUS IMPACTION: AN UNUSUAL PRESENTATION OF LATERAL MEDULLARY INFARCT MANIFESTING AS ISOLATED DYSPHAGIA

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Dysphagia is often attributed to a mechanical obstruction, dysmotility, or neurologic origin. At times identifying the etiology may pose a diagnostic challenge, especially when the presentation is atypical. A 60-year-old male presented to the emergency department with dysphagia and food bolus impaction. Suspecting a cricopharyngeal web and possible food bolus impaction, EGD was performed that revealed a cricopharyngeal web but no food bolus. He did not improve with dilation. Neurological examination revealed a weak gag reflex and mild right facial droop. Suspecting neurological etiology a speech pathology consultation was obtained that showed profound pharyngeal muscular weakness and nearly absent swallow initiation on modified barium swallow. MRI of the brain was inconclusive. A digital subtraction angiography (DSA) of head and neck suggested subacute infarct of right pontomedullary junction due to terminal segmental right vertebral artery occlusion causing a subacute stroke. This was deemed to be the cause of his severe dysphagia. He was treated conservatively with supportive care and nutritional support with a PEG tube placement while recovering from stroke. Over the next five weeks, his dysphagia significantly improved allowing oral intake. This case highlights an atypical presentation of dysphagia and food bolus impaction that initially prompted a GI evaluation but subsequently turned out to be a manifestation of subacute stroke due to lateral medullary infarct. Absence of clinical improvement and accompanying subtle neurological signs strongly favored suspicion for neurogenic etiology and related workup with MRI and DSA establishing the diagnosis. The neurogenic etiology of an acute or subacute oropharyngeal dysphagia should be suspected, especially if the history is atypical for food bolus impaction whenever the patient has risk factors conducive to neurovascular disease.
"A STITCH IN TIME": PALLIATIVE ESOPHAGEAL STENT ANCHORED WITH ENDOSCOPIC OVERSTITCH

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A 94 year old male with a past history of hypothyroidism, hypertension, and acid reflux complained of progressively worsening dysphagia and weight loss over five months. An esophagogastroduodenoscopy showed a four centimeter, circumferential, near-obstructing, ulcerated mass in the distal esophagus (Figure 1). Biopsy revealed poorly differentiated invasive adenocarcinoma. Considering his advanced age and morbidity associated with surgery and chemotherapy, he preferred to undergo palliative radiotherapy following endoscopic esophageal stenting for relief of dysphagia. A 22mms wide, 10cms long covered Hanaro esophageal stent was deployed under fluoroscopic guidance. To prevent dislodgement of the stent following palliative radiotherapy due to tumor necrosis, the stent was anchored with an endoscopic OverStitch device using a running suture at the proximal end of the stent (Figure 1). Over the next four weeks his nutritional status improved allowing him to undergo radiotherapy uneventfully.

Esophageal adenocarcinoma develops through Barrett's metaplasia of the lower esophagus following long standing acid reflux. Esophageal adenocarcinoma is ranked sixth among all cancers in mortality affecting more than 450,000 people worldwide [1]. Palliation of dysphagia in esophageal cancer with endoscopic stenting is a minimally invasive alternative to feeding gastrostomy prior to chemoradiation or as a sole palliative measure in terminally ill patients to improve quality of life. Common complications of esophageal stenting include airway compromise due to malposition, perforation, and stent dislodgement. Covered esophageal stents in particular are associated with higher rates of displacement due to silicone covering hence the need for some form of anchoring. When compared to stent placement alone stent anchored with endoscopic suturing, as was done in the presented case, has been shown to be effective and safe at preventing stent migration [2].
GENETIC TESTING FOR CYP2C19 POLYMORPHISMS IN THE ELDERLY TO PREDICT RESPONSE TO CLOPIDOGREL [PLAVIX]: CASE STUDY AND LITERATURE REVIEW

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Pharmacogenetics has begun to play an important role in developing treatment plans for patients. Since each patient has a unique genetic code, it means they metabolize drugs differently. Therefore, understanding their genetics and tailoring treatment to their specific needs allows for better, more effective care. One example of the importance of pharmacogenetics is the use of Clopidogrel, more commonly known as Plavix. This thienopyridine is metabolized by two proteins from the CYP450 enzyme family. The protein coded by CYP2C19 is of special interest because there are many different alleles and the type of allele an individual has determines his or her ability to metabolize Plavix. Patients with either the *17 gene, the *1 gene or a combination of both are able to metabolize Plavix properly, but patients who have the *2 allele are unable to metabolize it and therefore an alternative treatment should be recommended. The pharmacogenetics of Plavix are especially important for the elderly population because it is given as part of a dual anti-platelet therapy following a heart attack or stroke – conditions that frequently effect the aging population. The purpose of this study is to compare the current guidelines for molecular testing of CYP2C19 and compare it with UTMB’s current use molecular diagnostic testing and its impact on clinical decision making. This was done by reviewing charts of patients who had undergone pharmacogenetic testing and comparing the results of their tests with their treatment. Our results indicate that molecular diagnostic testing plays an important role in determining therapy. Furthermore, expanding molecular diagnostics and pharmacogenetics will play an important role in the treatment of the elderly.
TOWARDS DEFINING MULTIMORBIDITY IN THE MEXICAN ELDERLY: A LITERATURE REVIEW

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Estimates indicate that by 2050, the proportion of those aged 60 years and older will triple with a parallel increase in chronic conditions. The incidence of non-communicable diseases (NCDs) increases with age, affecting more than 50% of older adults. Multimorbidity, defined as the co-existence of two or more chronic conditions in an individual, is present in 55%-98% of older adults. However, the lack of consensus on its definition has created difficulties for reaching conclusions about its impact on the complex geriatric population, insufficiently managed by a health-care system traditionally focused on single diseases.

In research, multimorbidity has been defined by counting conditions based on predetermined lists; some definitions are restricted to physical conditions, while others have included mental health and communicable diseases. Additionally, authors have included poor health states and socioeconomic factors. Regardless of the definition, multimorbidity predicts low self-perceived health, disability and death.

Research on multimorbidity has been conducted mostly in high-income countries. However, the burden of multimorbidity differs in low- and middle-income countries (LMICs), where health-care systems with limited resources are burdened with additional costs related to communicable diseases. Poor self-perceived health has been described in LMICs associated to the "mixed regime of infectious and chronic conditions". These differences warrant an assessment of the current concept of multimorbidity in these special settings.

In the Mexican Health and Aging Study (MHAS) –a longitudinal nationally representative study of aging in Mexico– about 60% of participants have reported at least one NCD. We will use its wealth of data from four waves to better understand and analyze this concept in the Mexican context.
COSTS OF RADICAL CYSTECTOMY VERSUS TRIMODAL THERAPY FOR PATIENTS WITH MUSCLE-INVASIVE BLADDER CANCER

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Purpose: To compare costs associated with trimodal therapy versus radical cystectomy among older adults with muscle-invasive bladder cancer.

Methods: Using Surveillance, Epidemiology, and End Results (SEER)-Medicare linked data, we enrolled a total of 2,963 patients aged ≥66 years diagnosed with clinical stage T2-4a bladder cancer between 2002 and 2011. We compared total Medicare costs within one year of diagnosis among patients following radical cystectomy or trimodal therapy using inverse probability of treatment weighted (IPTW) propensity score models, which included a two-part estimator to account for intrinsic selection bias.

Results: Median total costs were significantly higher for trimodal therapy than radical cystectomy in 90 days ($83,754 vs. $68,692; median difference $11,805, 95% CI $7,745 to $15,864), 180 days ($187,162 vs. $109,078; median difference $62,370, 95% CI $55,581 to $69,160), and 365 days ($289,142 vs. $148,757; median difference $109,027, 95% CI $98,692 to $119,363), respectively. Outpatient, radiology, pharmacy and pathology/laboratory costs contributed largely to the significantly higher costs associated with trimodal therapy. On IPTW-adjusted analyses, patients undergoing trimodal therapy had $142,337 (95% CI $117,423-$175,300) higher costs compared with radical cystectomy one year after treatment.

Conclusions: Compared to radical cystectomy, trimodal therapy was associated with higher costs among patients with muscle-invasive bladder cancer. Extrapolating cost figures to the total US population resulted in excess spending of $853 million for trimodal therapy compared with radical cystectomy for patients diagnosed in 2018.
POPULATION-BASED OUTCOMES COMPARING RADICAL CYSTECTOMY WITH TRIMODAL THERAPY FOR PATIENTS DIAGNOSED WITH LOCALIZED MUSCLE-INVASIVE BLADDER CANCER

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Introduction: Treatment guidelines for muscle-invasive bladder cancer recommend radical cystectomy. However, use of trimodal therapy has increased in recent years with conflicting survival outcomes. The aim of this study was to compare radical cystectomy and trimodal therapy in terms of survival outcomes and cost of treatment.

Methods: Patients aged 66 years or older diagnosed with clinical stage T2-4a bladder cancer from January 1, 2002- December 31, 2011 were included from the Surveillance, Epidemiology, and End Results (SEER)-Medicare database. Outcomes included cancer-specific survival, overall survival, and 6-month costs. Cox proportional hazards regression, propensity score matching (PSM) and inverse probability of treatment weighting (IPTW) were used to control for baseline differences between patients undergoing radical cystectomy vs. trimodal therapy, and to determine predictors for overall and cancer-specific survival.

Results: A total of 2,963 patients were included: 728 (24.6%) who underwent trimodal therapy were compared to 2,235 (75.4%) who underwent radical cystectomy. In all adjusted analyses, patients who underwent trimodal therapy had significantly decreased cancer-specific survival (Cox regression: Hazard Ratio (HR) 1.51, 95% Confidence Interval (CI) 1.40-1.63; PSM: HR 1.55, 95% CI 1.32-1.83; IPTW: HR 1.51, 95% CI 1.40-1.63) and overall survival (Cox regression: HR 1.54, 95% CI 1.39-1.71; PSM: HR 1.49, 95% CI 1.31-1.69; IPTW: HR 1.54, 95% CI 1.39-1.71). However, median total costs over six months period were significantly higher with trimodal therapy than radical cystectomy ($171,401 vs. $99,890, p<0.001).

Conclusion: trimodal therapy was associated with decreased cancer-specific and overall survival at increased costs compared to radical cystectomy. This observational study provides further evidence to suggest the superiority of radical cystectomy over trimodal therapy in patients with muscle-invasive bladder cancer.
OPTIMAL CUTOFFS FOR THE MONTREAL COGNITIVE ASSESSMENT VARY BY RACE AND ETHNICITY

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INTRODUCTION: The Montreal Cognitive Assessment (MoCA), scored from 0 to 30, is used as a screening tool for MCI. The current cutoff (26) may not be optimal among minorities.

METHODS: Data from the National Alzheimer's Coordinating Center (NACC) Uniform Data Set (UDS) March 2018 data freeze was used to calculate optimal cutoffs for detection of MCI and dementia by race/ethnic group and education.

RESULTS: Of the 3,895 individuals included, 80.7% were non-Hispanic White, 15.0% were non-Hispanic Black, and 4.2% were Hispanic. Optimal cutoffs for detection of MCI were 25 among non-Hispanic Whites, 24 among Hispanics, and 23 among non-Hispanic Blacks. Optimal cutoffs for detection of dementia were 19 among non-Hispanic Whites, and 16 for both non-Hispanic Blacks, and Hispanics. Lower educational attainment produced lower optimal cutoffs.

DISCUSSION: Our findings suggest cutoffs may need to be stratified by race/ethnicity and education to ensure detecting MCI from normal and MCI from dementia.
A QUALITY IMPROVEMENT PROJECT TO REDUCE 30 DAY RE-HOSPITALIZATION RATES FOR NURSING HOME PATIENTS

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Background: High hospitalization rates in skilled nursing facility patients result in high health care costs and poor health outcomes. Use of risk prediction models to identify patients at high risk for hospital readmission has the potential to reduce hospital readmissions and increase cost effectiveness by focusing risk reduction interventions. A gap in the literature exists for readmission risk prediction models validated for use in older adults receiving care in nursing homes and for implemented intervention stratification models.

Objective: To reduce facility 30 day re-hospitalization rates.

Setting: A 113-bed privately-owned suburban skilled nursing facility that provides care to short stay and long term care nursing home patients in League City, Texas.

Subjects: All admissions during the study period were assessed using the HOSPITAL risk prediction tool. Patients with a HOSPITAL score of ≥7 received the intervention.

Methods: Patients within the intervention group received an admission visit from the primary care provider within 24 hours, 2-3 follow-up visits per week and a daily registered nurse assessment including diagnosis specific monitoring for high risk conditions.

Measurements: Facility reported 30-day re-hospitalization rates prior to and after the intervention were collected and analyzed.

Results: Readmission rates fell to 13.4% by the conclusion of the data collection period in comparison to the previous rate of 18.75%. Male gender and discharge from a long term acute care hospital were associated with a high risk of hospital readmission. Weekend and holidays influenced compliance with RN assessments and medical provider visits. Conclusions: This project successfully reduced 30-day hospital readmission rates post-intervention in the target facility by focusing increased RN assessment and medical provider care on patients with a high predicted risk of hospital readmission.
IMPROVING GERIATRIC CARE COORDINATION THROUGH EMR ADAPTATION AND STRUCTURED INTERDISCIPLINARY ROUNDS

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Our Adult Care for the Elderly unit was experiencing inefficient care planning despite unit nurse led interdisciplinary team meetings due to poor attendance, ineffective meeting structure, and lack of electronic support tools. Emphasis was placed on redesigning IDT to provide a streamlined and structured reporting process backed by electronic assessment tools. This allowed us to focus on improving efficiency, patient outcomes, and reduction of length of stay. In 2016, to improve the efficiency of care for all hospitalized patients, UTMB implemented a structured care team process called Progression of Care Rounds (POCR). POCR provided a framework with clearly defined interdisciplinary team members focused on proactive preparation for discharge. Simultaneously, we redesigned the EMR to include geriatric assessments and reports. Completion of geriatric assessments and IDT participation were tracked along with length of stay. With analysis by linear regression, our estimated initial average length of stay baseline was 5.7 days.

After POCR, IDT included pharmacy, therapy services and care management with simultaneous improvements in completion and recognition of geriatric syndromes. Completion rates of paper functional assessments was at <10% before EMR upgrades. After EMR redesign and POCR implementation, 86% of functional assessments are now completed on patients. 14 months post implementation of POCR, our regression analysis reflected an average length of stay decrease of .23 days/month (p value = .0117) ending with an average length of stay of 2.7 days.

The POCR initiative improved Geriatric care coordination and rebuilding our ACE Unit IDT. It provided support, accountability, and structure with a goal of improved efficiency and quality of care. Simultaneous EMR enhancements were necessary to drive the geriatric focus including recognition and reporting of geriatric syndromes.
NURSES IMPROVING CARE FOR HEALTH-SYSTEM ELDERS (NICHE) PROGRAM

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Nurses Improving Care for Health-system Elders (NICHE) is an international nursing education and consultation program which has a network of over 566 member organizations nationally and internationally. It provides evidence based educational resources that align with regulatory and recognition programs and provides access to collaborative networking across national and international health systems. Since the early 2000’s UTMB has been recognized as an organization committed to providing age sensitive and exemplary care of the older adult. In 2015 the institution recommitted to being a NICHE hospital.

Milestones:
- Imbedding of geriatric principles
  - Developed functional and cognitive assessment screens into EMR
  - Decrease in total falls on the Acute Care of Elders Unit from 28 in 2015 to 10 in 2017. Estimated cost savings of $120,042 in one year
  - Using NICHE educational resources, provided education to 139 nurse interns and 184 experienced new hires.
- Collaborative Practice
  - Collaborated with Aurora Health System and the University of Alabama to build our ACE Tracker. The ACE Tracker provides a comprehensive snapshot of those patients over the age of 70 who are at risk of developing geriatric syndromes.
  - Implementation of activity cart / apron for patients with dementia and delirium.
  - Implementation of female external urinary catheter to decrease use of IUC and diapers.
  - Participation in NICHE initiative to improve geriatric vaccination rates
- Presentations at National NICHE Conference since 2015
  - Podium, poster and roundtable presentations at annual conference since 2015
  - Plenary guest speaker at 2018 NICHE conference.

Since 2015, we have systematically laid the foundation to imbed geriatric principles, tools and processes to improve care of the older adult.
WHAT YOUR PATIENTS DON'T TELL YOU: A CASE OF POLYPHARMACY AND NUTRACEUTICAL USE CAUSING HALLUCINATIONS IN A GERIATRIC PATIENT

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Introduction: Nutraceuticals are an emerging class of natural products that blur the lines between food and drug. They include vitamins and food derivatives that are purported to provide health benefits beyond basic nutritional value. As many as 70% of US consumers use some form of a nutraceutical product daily, many of them in the geriatric population.

Case Presentation: Patient is a 76 year old woman presenting with visual hallucinations. She had visions of snakes, rain, grass growing in her room. The hallucinations have occurred intermittently for 6 months and this is the third occurrence. The prior episodes occurred in the setting of UTI for which she was treated. She was subsequently admitted to the hospital for delirium. Physical examination, laboratory work up and imaging including evaluation for infection, metabolic and neurologic derangements were negative. By the second day of hospitalization, the hallucinations had subsided. Additional history provided by the patient’s family revealed that in addition to prescribed medications, patient was taking multiple over the counter antihistamine medications, vitamins and herbal supplements, raising concern for polypharmacy, drug interactions and possible toxicities as a driver of her symptoms.

Discussion: The purported health benefits associated with nutraceutical use are questionable. Concurrent polypharmacy and nutraceutical use in the elderly can lead to interactions and potential toxicity. Reported cases of toxicities include liver toxicity, bradycardia, blurry vision, bleeding and altered mental status. Simultaneous exposure to other compounds and the heterogeneous composition of nutraceuticals often obscures the determination of toxic mechanisms, even when doses are known. Alarmingly, many patients do not report the use of nutraceuticals to their physician. Medication reconciliation should routinely include evaluation of nutraceutical use.
ATYPICAL KLEINE-LEVIN SYNDROME IN A FEMALE OCTOGENARIAN: RESOLUTION OF HYPERSOMNIA WITH ORAL MODAFINIL

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Background: Kleine-Levin syndrome (KLS) is a rare condition, with typical course characterized by episodes of hypersomnia, and accompanied by behavioural changes including hypersexuality, hyperphagia and occasional psychosis. Previous reports have described cases affecting young adolescents, particularly males. Few cases of affected older adults have been published.

Clinical case: An 87 year old lady with a history significant for atrial fibrillation, previous deep venous thrombosis and pulmonary embolism, and recurrent VRE UTI presented with confusion and possible seizure-like activity. The patient’s daughter noted that patient was typically very sleepy at home, rarely awakening despite loud noises, urging, and physical stimulation. Physical examination revealed an elderly lady who was somnolent. Neurologic consult obtained and treatment with phenytoin was started for possible, then changed to lacosamide due to persistent somnolence. Brain imaging including CT was negative for intracranial abnormality. Electroencephalogram demonstrated no epileptiform activity and neurologic workup for leptomeningeal infection was negative by lumbar puncture. Further investigations revealed deficiencies of Vitamins B6, and B12 which were replaced. Despite this, the patient remained drowsy, with intermittent short-lived episodes of wakefulness where she was irritable. Her somnolent state persisted until the tenth day of hospitalization, where her sleepy state reversed following administration of 200 mg of modafinil. Over the next 48 hours her condition improved: patient was awake during the day, conversing with visitors and feeding herself. She did not seem to remember her prior state of decreased consciousness and seemed unbothered by it.

Conclusion: This case highlights the importance of investigating and ruling likely causes for sudden onset hypersomnia, especially in a female octogenarian without typical presentation of KLS.
“AGITATED DELIRIUM AFTER STARTING LEVIRACETAM FOR SEIZURE IN A SEPTUAGENARIAN: RESPONSE TO LOW DOSE OLANZAPINE”

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Introduction: This is the case of a 75 years old female patient who was started on levetiracetam for seizure disorder that was confirmed with EEG 2 months prior to presentation, who presented with new symptoms suggestive of disinhibition, delusion, hallucination, agitation. The patient was treated with low dose olanzapine and she showed remarkable improvement in her symptoms.

Case Description: 75 year old female with PMH of Depression, Ant communicating aneurysm s/p clipping complicated by right frontal stroke and Seizure disorder (confirmed with EEG) who was started on Levetiracetam 2 months ago was evaluated by Geriatrics for acute worsening of agitation, disinhibition, delusion, hallucination, and other behavioral problems in the patient. Per family, the patient started showing some behavioral changes and absurd conversation since starting Levetiracetam for which they had a neurology evaluation. Patient was on Bupropriion for depression which was discontinued then and Quetiapine was started. However, the patient’s family stopped Quetiapine as they found no relief in the symptoms and noticed worsening of symptoms.

Patient did not have symptoms suggestive of pain, fever, infection, dysuria, constipation, diarrhea, ischemia, stroke, dysuria and hemorrhage. Patient used to be independent for her BADLs up until 2 months ago but has been needing help with BADLs and IADLs for past 2 months.

Her vitamin levels were within normal limits. Labs did not reveal any gross abnormality. Imaging did not show any acute changes other than recurrence of the small aneurysm. Since abrupt discontinuation of levetiracetam could cause withdrawal seizures, we started the patient on low dose of Olanzapine instead of changing Levetiracetam to Valproic acid. Within 1 week, the patient showed remarkable improvement in her symptoms.
DELIRIUM SECONDARY TO MULTIFACTORIAL ETIOLOGY TREATED WITH OLANZAPINE

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Mukaila Raji, MD, MS, Division of Geriatrics

Introduction: This is the case of a 75 years old female patient who was started on levetiracetam for seizure disorder that was confirmed with EEG 2 months prior to presentation, who presented with new symptoms suggestive of disinhibition, delusion, hallucination, agitation. The patient was treated with low dose olanzapine and she showed remarkable improvement in her symptoms.

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Since abrupt discontinuation of levetiracetam could cause withdrawal seizures, we started the patient on low dose of Olanzapine instead of changing Levetiracetam to Valproic acid. Within 1 week, the patient showed remarkable improvement in her symptoms.
THE INDIRECT IMPACT OF A 4-WEEK MANUAL THERAPY INTERVENTION ON GAIT IN PEOPLE OVER THE AGE OF 50 WITH HYPERKYPHOSIS

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The purpose of this study was to observe the effects of a 4-week manual therapy intervention on posture and how that impacts the spatiotemporal characteristics of gait for people ≥50 with hyperkyphosis.

Four females and 1 male (mean age 71.6) participated. Three times a week for four weeks, each received up to 1 hour of manual therapy to the spine and surrounding joints along with therapeutic exercise for postural muscles. The subjects were instructed to walk across a GAITRite mat wearing Tekscan inserts for five trials at their 1st, 6th, and 12th visits. Gait outcomes measured were pressure changes during the gait cycle, gait velocity, step and stride length, percent double limb support, percent single limb support, and base of support. Other outcome data was height, weight, and posture/flexicurve. Descriptive analysis was used along with a paired t-test to compare initial to final data.

Posture improved and positive trends were observed in all measures. Mean increases in gait velocity (11.32 cm/s), step length (2.65 cm), stride length (5.28 cm), and weight acceptance at loading response (21.19 lbs) were statistically significant with a paired t-test (p < 0.05). We observed an increase in weight acceptance at loading response, increased shock dissipation at midstance, as well as increased pressure at terminal stance.

The improvements in velocity as well as step and stride length are clinically correlated with the increased force acceptance at loading response. Despite an increase in propulsive forces at terminal stance, the change was not significant. Improvements in posture may improve balance and ability to control greater gait speed and step length. Future studies should include more participants to improve the accuracy of the results.
PAIN AND UPPER-LOWER EXTREMITY DISABILITY AMONG OLDER ADULT AMERICANS: FINDINGS FROM THE NATIONAL HEALTH AND AGING TRENDS STUDY.

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Background: Musculoskeletal pain is highly prevalent among older adults and the most common cause of disability.

Objective: To examine the effect of pain on upper-lower extremity (UE-LE) disability over time among older adult Americans.

Design: Longitudinal study.

Subjects: 8,245 participants aged ≥ 65 years from the National Health and Aging Trends Study (2011-2016), with complete information on pain and all the covariates of interest.

Measures: The outcome variable was UE-LE disability, assessed by self-reported questions about limitations in functional activities (able to put a heavy object or reach above the head, able to open a jar or grasp small objects, able to carry 20 or 10 pounds, able to walk 6 or 3 blocks, able to walk up 20 or 10 stairs, get down on knees, and able to bend over). UE-LE disability was defined as limitation in one or more of the four activities for UE and one or more of the six activities for LE. The main independent predictor was pain on weight bearing. Covariates included age, gender, race/ethnicity, marital status, education, comorbidities, and depression. General estimation equation model was fitted to test the effect of pain on UE-LE disability over time.

Results: At baseline, 54% reported pain, 28.9% reported UE disability, and 63.4% reported LE disability. The odds ratio of UE disability among participants without any UE limitations at baseline as a function of pain was 2.9 (95% CI=1.92-4.45), and for LE disability was 2.0 (95% CI=1.80-2.30) among those without any LE limitations at baseline, after controlling for all covariates.

Conclusions: Earlier assessment and better management of pain may prevent early disability in older adult Americans.

Key words: Pain; Disability; Older Adult Americans
AN EXPLORATORY STUDY OF COMMUNITY HEALTH PRIORITIES AND IMPLEMENTATION STRATEGIES FOR NONPROFIT HOSPITALS IN SOUTHEASTERN TEXAS.

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Jacques Baillargeon, PhD, Preventive Medicine and Community Health
John Prochaska, DrPH, MPH, Preventive Medicine and Community Health

Objective: This is an exploratory study that attempts to characterize the priorities and implementation strategies identified and implemented by a regional sample of Texas nonprofit hospitals. The priorities and implementation strategies are categorizing into four conditional categories and by levels of the social ecological model.

Methods: We performed content analysis of thirty-two publicly available community health needs assessment and implementation strategy reports from February 21, 2018 to March 25, 2018. Reports were published in 2016 and 2017 by nonprofit hospitals within a southeastern region of Texas, defined in this study by 16-counties in the 1115 Medicaid Waiver Regional Healthcare Partnership 2. We used four conditional categories (medical conditions, behavioral conditions, health system conditions, and community conditions) to categorize priorities. Within each priority conditional category, we also classified levels of implementation strategies, using the social ecological model, as intrapersonal, interpersonal, organizational, community, or policy.

Results: One-hundred thirty-five priorities were identified by the 32 nonprofit hospitals, with an average of four priorities per hospital. Health system conditions were the most commonly identified priority (63.0%). Nine-hundred sixty-seven implementation strategies were identified, with an average of 30 strategies per hospital. By conditional category, most strategies (55.7%) addressed health system conditions, while only 0.2% addressed community conditions. The greatest number of implementation strategies were classified at the intrapersonal level (41.3%), while only 0.5% were at the policy level.

Conclusion: While nonprofit hospitals are required to provide benefit to communities, most priorities hospital identified are health system-related and implementation strategies to address priorities are focus at the intrapersonal-level (on individuals). A greater emphasis on community priorities and policy-level strategies will likely have greater impact on community health improvement.
WEARABLE ELECTRONIC ACTIVITY MONITORS PRODUCED GREATER SELF-REGULATION AND PSYCHOLOGICAL NEED SATISFACTION THAN PedomETERS IN A RANDOMIZED TRIAL

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Purpose: Increasing physical activity (PA) is associated with decreased risk of multiple cancers, but unfortunately rates of PA are low among American adults. Behavioral interventions have demonstrated that targeting self-regulation and psychological need satisfaction can improve PA. Electronic activity monitors (EAMs) are a potential medium for delivering intervention components, but the extent to which they successfully target these theoretical constructs is unclear. The purpose of this study was to compare impacts on self-regulation and psychological need satisfaction between EAMs and standard pedometers in the context of a low-intensity behavioral intervention.

Methods: As secondary outcomes of a pilot randomized controlled trial, 40 primary care patients completed the Exercise Goal-Setting Scale, Exercise Planning and Scheduling Scale, and the Psychological Need Satisfaction in Exercise Scale. Participants were then randomized to either a pedometer (PM) group or an EAM group (Jawbone UP24) to monitor activity over 12 weeks. Both groups were reassessed at the end of the 12 week period.

Results: ANCOVA controlling for demographic and baseline levels of the outcome revealed that participants in the EAM group were significantly more likely to set exercise goals (31.0 vs. 22.34; P<.0001), schedule and plan their exercise (26.4 vs. 20.45; P<.05) and feel competent (3.42 vs. 2.49; P<.001), autonomous (4.01 vs. 3.16; P<.001) and related to others (3.94 vs. 3.23; P<.01) when exercising relative to those in the PM group.

Conclusions: Our findings suggest that an EAM intervention improves goal behaviors as well as PA competence, autonomy and relatedness. A PA intervention that addresses these psychological outcomes may be imperative to PA behavior maintenance and thus may function as an EAM intervention mechanism targeting PA and weight outcomes.
Falls among older adults is a very concerning health issue. One in every four older adults experiences at least one fall in their lifetime. Falling once puts an older adult at twice the risk of falling again. A fall can cause serious injuries and trigger a cascade of adverse health events that highly increase the older adult individual's risk of losing their ability to live independently. The mortality rate associated with falls among older adults is very high. Falls are largely preventable. A free-of-cost Fall Prevention Clinic has been introduced as a collaboration between the Osher Lifelong Learning Institute (OLLI) and the Department of Occupational Therapy at the University of Texas Medical Branch (UTMB) beginning January 2018. The clinic is located at OLLI and provides services to the OLLI members, who are older adults living in the community. The clinic has been introduced in the form of a clinical selective course taught to the Masters in Occupational Therapy (MOT) students, where the students learn hands-on clinical skills. At this student-run clinic, students learn clinical patient care skills from providers of various disciplines. Physical Therapy (PT), a nurse practitioner, and a medical doctor each contribute their respective clinical expertise into the plan of care. The interventions are based on a preventive and wellness approach. Beyond meeting immediate therapeutic needs, services include client education and empowerment for taking ownership of maximizing their health status. The clinic connects clients with local organizations that provide in-home services including home environment modifications. Outcomes are measured using scores on physical performance tests, fall risk checklist, falls self-efficacy scale, client feedback and by monthly telephonic follow-ups post-discharge.
CO-CALIBRATED ADMISSION FUNCTIONAL SCORE AND SUBSEQUENT POST-ACUTE CARE UTILIZATION FOR MEDICARE BENEFICIARIES

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Objective: To describe co-calibrated admission functional scores for Medicare beneficiaries transitioned to one or more post-acute care (PAC) settings with stroke, lower extremity joint replacement (LEJR), or hip/femur fractures (HFF) procedures, after acute hospitalization. In addition, to examine whether co-calibrated admission functional scores associate with probability to use subsequent (1 vs. >1) post-acute care (inpatient rehabilitation facility {IRF}, skilled nursing facility {SNF}, home healthcare {HH}, and home without home healthcare).

Methods: Secondary analysis of Medicare data for 2013-2014. Logistic regression models were constructed stratified by three impairments. Dependent variable was patient discharge to more than one subsequent post-acute setting (yes/no). Functional scores were separated by two domains (self-care and mobility) and co-calibrated into a 0-100 scale for three functional assessments: Inpatient Rehabilitation Facility Patient Assessment Instrument (IRF-PAI), Minimum Data Set (MDS) and Home Health Outcome and Assessment Information Set (OASIS), for IRF, SNF and HH, respectively.

Results: Included cases were aged 66 or older on Medicare fee-for-service plan (stroke=160,702, LEJR=523,122, and HFF=135,913). The majority of beneficiaries with stroke was initially discharged to IRF (45%); those with LEJR, to HH (46%); and with HFF, to SNF (65%). In the adjusted model, function in IRF (self-care and mobility together) explained 12.1%, 2.9% and 5.6% variance of receiving a second PAC for stroke, LEJR and HFF; while function in SNF explained 1.9%, 1.0% and 0.5%, respectively.

Conclusions: Beneficiaries using one or more PAC settings had significant different co-calibrated admission functional scores, which varied by impairment conditions. Future work should consider variations in functional status associated with subsequent post-acute discharge destinations, to compare effectiveness of PAC settings on health outcomes.
EVALUATING THE IMPACT OF HOSPITAL READMISSIONS REDUCTION PROGRAM ON READMISSION RATES

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Objective: To examine whether preexisting trends of hospital readmission existed before implementation of the Hospital Readmissions Reduction Program (HRRP) and identify whether HRRP implementation affected hospital readmission differently for targeted and non-targeted diagnoses.

Design: We used retrospective 100% Medicare claims data (2008-2015), covering 7,851,430 hospital discharges for three HRRP-targeted conditions: acute myocardial infarction (AMI), congestive heart failure (CHF), pneumonia; and three non-targeted conditions: ischemic stroke, lower extremity joint replacement (LEJR), and hip/femur fractures (HFF). We followed Centers for Medicare & Medicaid Services standardized methodologies to measure condition-specific hospital 30-Day Risk-Standardized Readmission Rate (RSRR) for each hospital by quarter. Longitudinal data analyses were conducted to estimate and compare the RSRR trends before and after HRRP implementation.

Main Outcome Measures: 30-day RSRR.

Results: RSRRs decreased before and after 2012 for AMI, decreased before 2012 but remained the same after 2012 for CHF, and slightly increased before 2012 and slightly decreased after 2012 for pneumonia (slope difference: 0.11 {0.09, 0.13}, 0.06 {0.06, 0.06} and -0.02{-0.02, -0.02}). RSRRs decreased more before 2012 for ischemic stroke and lower extremity fracture, but slopes before and after 2012 did not change for lower extremity joint replacement (slope difference: 0.06 {0.05, 0.06}, 0.03 {0.03, 0.03}, 0.00 {0, 0}, respectively).

Conclusions: For targeted diagnoses, RSRRs decreased more after the HRRP implementation only in pneumonia. For non-targeted diagnoses, all had decreasing trends before and after HRRP implementation but no difference in the slope trends for lower extremity joint replacement. Future study should identify whether HRRP implementation is the main contributor to such trend changes.
A SYSTEMATIC REVIEW: ADL IMPAIRMENTS IN OLDER MEXICAN AMERICANS

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This systematic review was conducted to examine published, peer-reviewed studies addressing impairments in the performance of the activities of daily living (ADL) of older Mexican Americans, and the influence of contextual and environmental factors on the ability to complete ADL. Results from the studies were obtained by analyzing participant responses in the Hispanic Established Population for the Epidemiological Study of the Elderly (HEPESE) over several years. The authors searched multiple databases (e.g., PubMed, CINHAL) and 13,936 articles were identified, from which 30 articles were selected to be reviewed for relevance. Of those 30 articles, 25 full-text articles were assessed for eligibility, and 10 articles were excluded.

As a result, 15 articles were included in this review. The selected studies were examined for content relevant to the sub-topics of health, mobility, frailty, social environment, and strength. Overall, the findings support that contextual and environmental factors, along with physiological and psychological comorbidities, play a major role on ADL impairments in the older Mexican American population. However, further research is recommended using more participants outside of the HEPESE study to explore interventions that can be used to help this population maintain their ADL independence.
FRAILTY AS A PREDICTOR OF LIFE-SPACE MOBILITY AMONG COMMUNITY DWELLING OLDER MEXICAN AMERICANS

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Objective: To determine the effect of frailty on life-space mobility in older Mexican Americans over time.

Design: Longitudinal study (2008-2016), prospective cohort.

Setting: Hispanic Established Population for the Epidemiologic study of the Elderly survey conducted in the Southwestern United States (Arizona, California, Colorado, New Mexico, and Texas).

Participants: Two-Hundred and Seventy-Seven Mexican Americans aged 75 years and older within the general community. Those with restricted life space (score < 48, n = 384) and missing frailty status at baseline (n = 70) were excluded.

Main Outcome Measure: Life-space assessment (LSA) during the past 4 weeks. Scores ranged from 0 (daily restriction to the bedroom) to 120 (daily trips outside their own town without assistance).

Results: The mean LSA score at baseline was 63.0 (95% CI: 61.2-64.9) for non-frail, 65.6 (95% CI: 62.6-68.7) for pre-frail, and 60.3 (95% CI: 56.2-64.5) for frail participants. Using general linear mixed models, it was found that pre-frail participants had greater decline in LSA over 8-years than non-frail participants (estimate= -1.10, standard error= 0.44; p-value=0.0117), after controlling for all covariates. Frail participants had greater decline in LSA than non-frail, but this association was non-significant (estimate= -0.39, standard error= 0.52; p-value=0.4548), after controlling for all covariates.

Conclusions: Pre-frail and frail older Mexican Americans experienced decline in their life-space mobility over 8-years of follow-up. Interventions targeting pre-frail and frail older Mexican Americans with high risk of restricted life-space are needed to enhance mobility performance in this population.
HISTORY OF HEART ATTACK AND FALLS IN OLDER MEXICAN AMERICANS AGED 75 YEARS AND OLDER

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Background: Falls are a major cause of morbidity, disability, institutionalization, and premature death. Little is known about the effect of history of heart attacks in older Mexican Americans as a risk factor for falls over 8-years.

Objectives: The objective of this study is to examine the long-term longitudinal relationship between a history of heart attack and falls in a well-defined sample of older Mexican Americans. We hypothesize that the incidence of falls in older Mexican Americans will be higher in those with history of heart attack.

Methods: This study included 1395 participants aged ≥75 years from the Hispanic Established Populations for the Epidemiological Study of the Elderly. Measures included socio-demographics, history of heart attack, body mass index, cognitive function, physical function, high depressive symptoms, falls, comorbid conditions, vision impairments, and disability. A general estimation equation model was fitted to test the effect of a history of heart attack on one or more falls over time.

Results: At baseline, the mean age of participants was 81.2 years (SD = 4.6) and 60.9% were female. Participants with a history of heart attack were 1.6 times more likely to have one or more falls over time after controlling for all covariates than those without a history of heart attack.

Conclusions: Older Mexican Americans with a previous history of heart attack were significantly more likely to experience one or more falls over 8 years than those without history of heart attack. The findings of this study suggest cardiovascular disease is an important factor to assess in older adults with high risk of falls.
THE EFFECT OF DIABETES ON THE COGNITIVE TRAJECTORY OF OLDER MEXICAN ADULTS

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Background: Older Mexican adults have high prevalence of diabetes, accompanied by poor diabetes management and low levels of education. There is consistent evidence that diabetes and education impact cognition. However, the cognitive trajectory associated with diabetes in a population with low levels of education and poor diabetes management is unknown.

Objective: Identify how diabetes affects the cognitive trajectory of older Mexican adults, and how this trajectory differs by education.

Methods: Individuals above 50 years old with direct interviews were selected from all waves of the Mexican Health and Aging Study (2001, 2003, 2012, and 2015). The outcome of interest was cognition, measured with 4 domains: verbal memory learning, verbal memory recall, visuospatial ability, visuospatial recall, and visual scanning. Cognition was analyzed by domains and as an average standardized score. Self-reported diabetes was the main independent variable. Linear mixed-effect models were used to test the impact of diabetes on cognition at baseline and over time (diabetes and age interaction). Age was centered at 65 years old.

Results: Near one third of the baseline population had 0 years of education and 13.1% had diabetes. At age 65, those with diabetes had significantly lower overall cognitive score than those without diabetes, and cognition significantly declined over time. Diabetes predicted cognitive decline over time in memory and non-memory domains (verbal recall and visual scanning).
EXPLORING AN ASSOCIATION OF UNHEALTHY FOOD AVAILABILITY, NEIGHBORHOOD POVERTY, AND DISTANT TUMOR STAGE IN INDIVIDUALS DIAGNOSED WITH COLORECTAL CANCER BY RACE AND ETHNICITY IN TEXAS

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Background: Colorectal cancer is quickly becoming a major population health concern. Beyond sociodemographic determinants, dietary factors are thought to be related to the development of colorectal cancer. The relationship between less healthy food availability and tumor stage at diagnosis is not well understood.

Objective: Explore the association of race/ethnicity, census tract poverty, density of unhealthy food stores, and distant tumor stage at diagnosis for individuals diagnosed with colorectal cancer.

Methods: Texas Cancer Registry provided data on colorectal cancer cases diagnosed from 2005-2014. Census Tract Poverty and Zip-Code count of Limited Service (e.g. fast food) restaurants was provided by American Community Survey (2005-2014). Zip-code restaurants were converted into census-tract estimates of fast-food stores per 1000 persons. Multi-level logistic regression (for examining hierarchical data and accounting for potential intra-group clustering) was used to estimate the relationship among race/ethnicity, poverty, and fast-food density in predicting tumor stage at diagnosis (distant vs. local/regional). We adjusted for age at diagnosis, age, sex, cancer site, urban/rural classification, percent white, percent male, and median age.

Results: Overall, tumors were more likely to be staged local/regional than distant (78% vs 22%). In bivariate analysis, non-Hispanic blacks were more likely to have a distant tumor than other races (28%). Non-Hispanic blacks, compared to whites, had higher odds of distant stage at diagnosis (OR: 1.27 95% CI: 1.15-1.39, p<0.0001) after adjustment for individual and area variables. Individuals who lived in census-tracts of higher poverty were more likely to have distant stage tumors (OR: 1.25 95% CI: 1.12-1.39, p<0.0001) compared to those who lived in areas with lower poverty. No relationship between unhealthy-food density and distant stage tumor was found (OR: 1.006, 95% CI: 0.995-1.013, p=0.07).
HEALTH LITERACY AND ACCESS AMONG MEXICAN ELDERLY ADULTS IN SOUTH TEXAS

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South Texas is a hotspot for health-care disparities. There is a clear contrast of medical resources (hospitals, clinics, and private practices) available for affluent areas and low-income, <95% Mexican, predominantly elderly, neighborhoods. There is also a health literacy divide that exists in the South Texas border, where language barriers and miscommunication can result in unwanted health outcomes. To date, there is a lack of research dedicated to the underlying healthcare gap among the elderly in the South Texas border. In addition, there is little information about proactive approaches to address the issue at hand. This introductory research project will begin to scratch the surface of understanding how to better treat geriatric patients in the South Texas border and how to promote a more equal healthcare system.
PSYCHOSOCIAL CHARACTERISTICS AND DEPRESSIVE SYMPTOMATOLOGY AMONG OLDER MEXICAN ADULTS

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The incidence of mental health problems, specifically depression, are increasing among older adults creating an important public health concern in Mexico and globally. Previous research identified psychosocial characteristics related to mental resiliency, such as increased conscientiousness and internal locus of control, as contributing to improved health behaviors and better physical and mental health outcomes. This study identifies the association between these psychosocial traits and depressive symptomatology among Mexican adults aged 50 and older using Wave 4 of the Mexican Health and Aging Study (2015). We hypothesize that psychosocially ‘strong’ older Mexican adults, those with higher levels of conscientiousness and an internal locus of control, will report fewer depressive symptoms; we theorize that gender moderates this relationship.

Older Mexican adults’ mental health status was measured through depressive symptomatology using a 9-item version of the Centers for Epidemiologic Studies-Depression (CES-D) scale. Conscientiousness was measured using a 6-item sub-dimension of the “Big 5” personality scale. Locus of control was measured using an 8-item scale adapted from Rotter (1966). Multivariable linear regression was used to examine mean differences in depressive symptomatology by levels of conscientiousness and locus and control adjusting for socio-demographic characteristics and comorbid chronic health conditions. Depressive symptoms were lower with higher age and formal education; however, older adults in rural environments who are divorced/separated or widowed exhibit higher depressive symptoms. The association between conscientiousness and depressive symptoms differed by gender. Locus of control and conscientiousness influenced depressive symptomatology in men, however, only conscientiousness impacted women’s depressive symptoms. Continued research is needed to assess psychosocial changes over the life-course as they contribute to resilience from adverse life-events that influence mental health in old age.
RACIAL/ETHNIC DIFFERENCES IN FACTORS CONTRIBUTING TO COMPLETION OF WRITTEN WILLS AND ADVANCE CARE PLANNING IN THE UNITED STATES

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Background: Inadequate preparation for medical care at the end of life can result in excess spending. To develop targeted interventions, it is important to understand population-level indicators for high-risk groups. This project aims to describe participation in: having a written and witnessed will, advanced directives (AD), and Power of Attorney (POA).

Methods: We use data from the Health and Retirement Study. We hypothesize the effect of education on having a written will is mediated by wealth and the effect of wealth on having AD or POA is mediated by estate planning. Logistic regression is used to investigate these hypotheses controlling for confounders (age, gender, race/ethnicity, education, marital status, and self-reported health).

Results: Results support our main hypotheses and highlight disparities for Non-Hispanic Blacks, Hispanics. In fully adjusted models, Non-Hispanic Blacks (OR: 0.36, 95% CI: 0.32-0.40) and Hispanics (OR: 0.28, 95% CI: 0.24-0.32) were less likely to have a will. The effect of education was mitigated by 38.0% in the highest achievement category with the addition of wealth. Similar results were seen for POA (NHB- OR: 0.54, 95% CI: 0.44-0.65, H- OR: 0.47, 95% CI: 0.36-0.61) and AD (NHB- OR: 0.40, 95% CI: 0.32-0.50, H- OR: 0.40, 95% CI: 0.30-0.53). The main effect of wealth was also mitigated in these models by 23% and 22%, respectively.

Conclusion: These findings demonstrate consistent findings for race/ethnicity for all three outcomes when controlling for other significant covariates. Generally, non-Hispanic Blacks and Hispanics are less likely to have a will, advanced directives, or power of attorney compared to non-Hispanic Whites. Additionally, with supporting evidence for our mediating hypotheses, further investigation should be done to understand who participates in estate planning.
END-OF-LIFE HEALTHCARE UTILIZATION OF OLDER HISPANICS WITH AND WITHOUT A DIAGNOSIS OF ALZHEIMER’S DISEASE AND RELATED DEMENTIAS

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Background: Little is known about the patterns of end-of-life (EOL) health care for older Hispanics with or without a diagnosis of Alzheimer’s disease and related dementia (ADRD). Our objective was to investigate the frequency of acute hospital admissions, intensive care unit (ICU) use, and ventilator use during the last 30-days of life of deceased older Hispanic Medicare Beneficiaries with and without an ADRD diagnosis.

Methods: We used Medicare claims data linked with survey information from 1,056 participants (mean age of death 85.1 years) of the Hispanic EPESE. Multivariable logistic regression models were used to estimate the odds for hospitalization, ICU use, and ventilator use in the last 30-days of life for decedents with ADRD compared to those without ADRD. Generalized linear models were used to estimate risk ratio for length of hospital stay (LOS).

Results: Within the last 30-days of life, 64.5% of decedents had an acute hospitalization (59.1% ADRD, 68.0% no ADRD), 34.1% had an ICU stay (31.3% ADRD, 35.9% no ADRD), and 17.2% used a ventilator (14.9% ADRD, 18.6% no ADRD). ADRD was associated with significantly lower hospitalization (OR=0.66, 95% CI=0.50-0.88) and shorter LOS (RR=0.76, 95% CI=0.64-0.89).

Conclusion: Hospitalization, ICU stay, and ventilator use are common at the end of life for older Hispanics. The lower hospitalization and shorter LOS of decedents with ADRD indicate a modest reduction in acute care use. Future research should investigate the impact of EOL planning on acute-care use and quality of life in terminally ill Hispanic older adults.
ENHANCING WELLBEING OF OLDER HISPANICS WITH DEMENTIA AND THEIR CAREGIVERS: THE ROLE OF FUNCTIONAL AND COGNITIVE DECLINE

Rafael Samper-Ternent, MD, PhD, Division of Geriatrics
Nai-wei Chen, PhD, Preventive Medicine and Community Health
Rebeca Wong, PhD, Preventive Medicine and Community Health
Elena Volpi, MD, PhD, Division of Geriatrics
James Goodwin, MD, Division of Geriatrics

Background: Older Hispanics have higher prevalence rates of Alzheimer’s Disease and Related Dementias (ADRD) compared to Whites in the United States (US). Older Hispanics with ADRD have an earlier onset of the disease, are diagnosed in more advanced stages of the disease, and have more behavioral issues compared to other population groups. Interventions seeking to improve quality, efficiency, or cost of care for persons with ADRD must attend to the patient-caregiver couple (Callahan, 2014). The current study describes couples of older adults with ADRD by race/ethnicity in a nationally representative sample of older adults in the US, the Health and Retirement Study (HRS). It compares functional and cognitive decline in these couples by race/ethnicity.

Data: We analyzed 6,703 couples interviewed in 2010. Of these couples, 811 were Hispanic, 869 were African American and 4358 were Non-Hispanic White. Among Hispanic couples, both members had cognitive impairment in 26.3% of the couples, compared to 26.6% of African American couples and 38.9% of White couples.

Discussion: White couples have higher rates of hospitalization in 2010 compared to Hispanics, while depression rates are higher among Hispanic couples. Odds of disability, hospitalization, and depression in 2012 are higher among couples where any partner has cognitive impairment. However, odds of hospitalization in 2012 are lower for Hispanic couples and odds of depression in 2012 are higher for Hispanics.

Conclusions: A couple approach to understanding dementia is important and necessary. Hispanic couples with cognitive impairment face important health-related challenges. Cognitive impairment is related to disability, hospital admission and depression and important disparities are observed among Hispanic couples. Lower rates of hospitalization among Hispanic couples over time are probably related to access issues.
RELATIONSHIP BETWEEN DIABETES-RELATED COMPLICATIONS AND SLEEP COMPLAINTS IN OLDER MEXICAN AMERICANS

Rizwana Sultana, MD, Department of Internal Medicine  
Brian Downer, PhD, Division of Rehabilitation Sciences  
Raji Mukaila, MD, MS, Division of Geriatrics  
Soham Al Snih, MD, PhD, Division of Rehabilitation Sciences  
Nai-wei Chen, PhD, Preventive Medicine and Community Health

Objective: The prevalence of Type 2 Diabetes Mellitus (T2DM) is increasing in the older American population, especially Mexican Americans, and is related to significant comorbidities. Sleep disorders are common in older adults and are frequent in patients with T2DM. This study examined the relationship between T2DM-related complications and sleep complaints in older Mexican Americans with T2DM.

Design: The study included 307 participants aged 77 years and older with self-reported diabetes from the Hispanic Established Population for the Epidemiological Study of the Elderly (2007/08-2016), an ongoing longitudinal study of noninstitutionalized Mexican Americans residing in five southwestern states.

Results: A substantial number of participants had trouble falling asleep (16.13%), waking up several times (36.45%), trouble staying asleep (15.16%), and waking up after their usual amount of sleep feeling tired and worn out (12.90%). Participants who experienced sleep complaints for 15 or more days in a month were significantly more likely to experience diabetic complications than those who experienced the same sleep complaints for less than 15 days.

Conclusion: Overall, the study demonstrated a significant link in older Mexican Americans between T2DM macro- and micro-vascular complications with increased risk of frequent sleep problems.
ALTERED MYOFIBER REPAIR AND PERFUSION RESPONSE FOLLOWING STRENGTH-TRAINING IN ELDERLY TYPE 2 DIABETICS

Stephanie Ortiz, Department of Nutrition and Metabolism
Tatiana Moro, PhD, Sealy Center on Aging
Blake Rasmussen, PhD, Department of Nutrition & Metabolism
Elena Volpi, MD, PhD, Sealy Center on Aging
Christopher Fry, PhD, Department of Nutrition and Metabolism

Older adults experience sarcopenia progressively with age and recent research has aimed to find effective lifestyle interventions to help protect this population from muscular atrophy. For individuals with type 2 diabetes, however, slowing sarcopenia becomes increasingly difficult. Diabetics suffer from decreased oxygen perfusion, insulin resistance, and satellite cell dysfunction compared to healthy controls which all play a role in the physiological response to physical activity. Little research has been done on the effects of strength-training on satellite cell abundance and capillary density for this population. This study was designed to assess how a 12-week strength-training regimen may impact capillary density, oxygen perfusion, and satellite cell abundance in older diabetic patients. Subjects (n=8) underwent skeletal muscle biopsies collected from the vastus lateralis in a clinical setting before and after completing the exercise intervention. The strength-training regimen consisted of hour long full body workouts three days a week (MWF). All biopsies were prepared for immunohistochemical analysis to determine fiber typing, satellite cell abundance, and capillary density. Capillary-fiber perimeter exchange (CFPE) was calculated to assess for tissue perfusion. Pre- and post-training biopsies were compared using paired t-tests (p<0.05). A Zeiss AxioImager M1 microscope was used to capture biopsy images and AxioVision 4.9 software was used to analyze outcomes in a blinded manner. There were no statistical differences in satellite cell abundance, capillary density, or perfusion for older type 2 diabetics before and after the 12-week strength-training regimen. Based on these findings, it can be assumed that type 2 diabetics have an altered physiological response to strength-training. Further research should be done to identify alternative strategies for improving satellite cell activation and angiogenesis within this population. Individualized exercise prescriptions should be considered as a means for targeting these outcomes. Of note, some of the muscle biopsies contained minor freeze-damage which may have influenced results.
Geriatric Medicine Fellowship Program

Mukaila Raji, MD – Director

This program is a fully accredited training program in geriatric medicine for graduates of internal medicine or family medicine residencies. Fellows become board-eligible after completion of the first year of the program that concentrates on clinician education. Clinical training is obtained in various settings including a geriatric outpatient clinic, an acute geriatric inpatient unit, a multidisciplinary consultation service, and a community-based long-term care program. Fellows may pursue a second year in the program with emphasis on geriatric clinical research.

Clinical Training

The Fellowship provides clinical training in various settings including:
- Geriatric Outpatient Clinic
- Acute Geriatric Inpatient Unit
- Community Long-Term Care Program
- Skilled Nursing Facility Service
- Home Visit Program
- Hospice
- Geriatric Psychiatry Service
- Additional training in rehabilitation, rheumatology, wound care

Geriatric Medicine Conferences

The Geriatric Conferences are a series of case conferences, board reviews, journal clubs or lectures designed to provide the Geriatric Medicine Fellows with a broad scope of Geriatric education.

GERIATRIC LECTURE SERIES
The Geriatric Lecture Series is designed to provide trainees with in-depth, formal instruction covering a wide range of topics in Geriatric Medicine. The Geriatric Lecture Series is a detailed, factual and formal lecture series by expert presenters from UTMB which allows for individual instruction to the fellows. The only required audience will be the fellows in the Geriatric program, although this series is open to all interested individuals including trainees from other programs, individuals of non-physician disciplines with interests in aging, and faculty in Geriatric Medicine.

GERIATRICS JOURNAL CLUB
The Geriatric Medicine Journal Club is designed to provide trainees with an increased knowledge of recent medical literature related to geriatric medicine and an improved ability to read in a critical manner. The Geriatric Medicine Journal Club is an interactive discussion of recently published literature presented by a fellow and another individual, who will present and lead discussion to an audience of all fellows in the program, trainees from other programs, individuals of non-physician disciplines with interests in aging, and faculty in Geriatric Medicine.

GERIATRIC MEDICINE BOARD REVIEW COURSE
The Geriatric Medicine Board Review Course is designed to provide trainees with a comprehension review of the clinical approach to illnesses of special interest to geriatric medicine and diseases prominent in the elderly. The Geriatric Medicine Board Review Course is an interactive presentation by the fellow in a review format. The audience is all fellows in the program, trainees from other programs, and faculty in Geriatric Medicine.

GERIATRICS CASE CONFERENCE
The Geriatrics Case Conference is designed to provide trainees a meaningful exposure to complex and challenging diagnostic and treatment issues for clinical and psychosocial problems of older patients. The Geriatrics Case Conference is an interactive presentation of actual clinical cases by the fellow or a faculty in the Division of Geriatric Medicine. The audience is all fellows in the program, trainees from other programs, and faculty in Geriatric Medicine.

Contact Vicki Hudson at (409) 772-1756 or vilhudso@utmb.edu for more information.
Medical Student Training in Aging Research (MSTAR)

The Medical Student Training in Aging Research (MSTAR) Program offers an 8-12 week intensive experience in aging research for first-year medical students. The goals are to: 1) include trainees from diverse backgrounds, 2) offer individualized, structured training that includes a mentor, a research project, didactics and supplementary experiences that results, at minimum, in an abstract presentation at AGS or at a National Student Research Forum, 3) promote a sense of identity and membership with the field of aging research, 4) incorporate responsible conduct of research into the experience and 5) develop and refine innovative approaches to promotion, training and evaluation. The program exposes students early in their careers to exciting opportunities and engaging mentors, and offers support to remain engaged after the experience. It helps prepare a new generation of mentors through the supervised junior mentor program. It provides partnerships between aging and numerous medical specialties. It is based on a structured, successful didactic sequence that focuses on the trainee’s concerns as they implement their own project. Training plans are developed for each student to reflect their individual research interests and progress is monitored by mentors chosen specifically with expertise to match the student’s research topic. The training plan includes a preparatory phase, the summer experience and post-experience support.

MSTAR, Grant #: T35 AG038048
A collaborative effort between the University of Texas Health Science Center-San Antonio & the University of Texas Medical Branch

2018 MSTAR Students, topics & mentors

1) Nicole Huang (UTMB)
   Team Structure of Medicare Shared Savings Program (MSSP) Accountable Care Organizations
   Mentors: Mukaila Raji, MD, MS, FACP & Yong Fang Kuo, PhD

2) Blake Johnson (UTMB)
   Using Resistance Exercise Training to Decrease Intramuscular Lipid Droplet Density in Older Adults
   Mentors: Elena Volpi, MD, PhD & Tatiana Moro, PhD

3) Christine Nguyen (UTMB)
   Differences in Healthcare Utilization at End of Life between Elderly Hispanics with and without Dementia.
   Mentors: Mukaila Raji, MD, MS, FACP & Brian Downer, PhD

4) Zaid Safder (UTMB)
   Physician Specialty and Anticoagulation Use in Patients with Atrial Fibrillation.
   Mentors: Hemalkumar Mehta, PhD

5) Eric Yeager (Texas Tech Paul L Foster School of Medicine)
   Influence of Age-Related Changes in Muscle Fibers on Physical & Contractile Fibrillation
   Mentors: Blake Rasmussen, PhD & Ted Graber, PhD

2017 MSTAR Students, topics & mentors:

1) Edgar Esparza (UTMB)
   Antidiabetic Prescription Drug Trends in the United States from 2007 to 2014
   Mentor: Hemalkumar Mehta, PhD

2) Usama Jazzar (UTMB)
   Population-Based Assessment of the Impact of Psychiatric Illness and Survival Outcomes Following Treatment for Patients with Muscle-Invasive Bladder Cancer
   Mentor: Stephen B. Williams, MD
2016 MSTAR Students, topics & mentors:

1) **Leyla Akhverdiyeva** (UTMB)
   Estimation of Appendicular Skeletal Muscle Mass Using Percent Body Fat Determined by Bioelectrical Impedance Analysis in Acutely Ill Elderly Adults
   Mentors: Elena Volpi, MD, PhD & Rachel Deer, PhD

2) **Justin Howard** (UTMB)
   A Mouse Model of Chronic Obstructive Pulmonary Disorder Induces Skeletal Muscle Atrophy and Alters Oxidative Capacity
   Mentor: Christopher Fry, PhD

3) **Jason Livingstone** (UT Health Science Center – San Antonio)
   Effect of Near-Infrared Light on CREB Phosphorylation in the Hippocampus of Tg2576 Mice
   Mentors: Giulio Taglialatela, PhD & Michele Comerota

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2015 MSTAR Students, topics & mentors:

1) **Mohammad Ali** (UTMB)
   Age-Related Functional and Molecular Changes in White Adipose Tissue
   Mentors: Labros Sidossis, PhD & Maria Chondronikola, PhD, RDN

2) **Abida Hasan** (A.T. Still University School of Osteopathic Medicine - Mesa, AZ)
   Development of a Pilot Survey: Addressing Patient-Centered Outcomes for Rehabilitation Post Stroke
   Mentors: Timothy Reistetter, OTR, PhD & Shilpa Krishnan, PT, PhD

3) **Jacob Moran** (UTMB)
   Quality Improvement Project: Improving the Number of Times Geriatric Patients Bring Their Medication Bottles into Clinic
   Mentor: Elizabeth Jaramillo, MD

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2014 MSTAR Students, topics & mentors:

1) **Joseph Gotesman** (MS II at Albert Einstein School of Medicine)
   The Effect of Reactivation of Telomerase on the Regenerative Potential of Adult Stem Cells
   Mentors: Ronald DePinho, MD & Deepavali Chakravarti, PhD (MD Anderson)

2) **Destiny Pegram** (UTMB)
   The Effect of Aging on the Metabolic Response to Severe Burn Injury
   Mentors: Maria Chondronikola, MS, RDN & Labros Sidossis, PhD

3) **Amanda Randolph** (UTMB)
   Metabolic Effects of Aerobic Exercise and Post-Exercise Amino Acid Supplementation in Healthy Older Adults
   Mentors: Melissa Markofski, PhD & Elena Volpi, MD, PhD

4) **Abigail Richison** (UTMB)
   A Randomized Controlled Double Blind Acute Study: Effects of Protein Blend Supplementation after Exercise on Muscle Protein Synthesis in Older Adults
   Mentors: Michael Borack, MSc & Blake Rasmussen, PhD

5) **Travis Urban** (UTMB)
   Developing an Investigational and Screening Assay for Cognitively Enhancing Protein Complexes
   Mentors: Kelly Dineley, PhD & Larry Denner, PhD
Research Services

**Mission:** Facilitate the UTMB research mission, from funding identification through project completion by:

- Providing research-specific resources and education
- Promoting the responsible conduct of research
- Advising and assisting with administrative policies and regulations

**Who we are:**

- Animal Resources Center (ARC)
- Clinical Research (OCR)
- Institutional Care and Use Committee (IACUC)
- Institutional Review Board (IRB)
- Office of Sponsored Programs
- Post Approval Monitoring (PAM)
- Research Education

**How we meet our mission:**

**Website**

The Research Resources website [https://research.utmb.edu/](https://research.utmb.edu/) allows researchers to access tools to help them wherever they are in the project process.

These tools include:

- Links to required forms
- Policies & Procedures
- Toolkits
- Find Funding Tools
- Calendar of Workshops
- News & Announcements
- Directory to Personnel
- How-to videos
- Much more ...

**Blog**

The Research Resources blog [https://research.utmb.edu/researchresourcesblog](https://research.utmb.edu/researchresourcesblog) provides current – updated funding opportunities, news for researchers on and off campus, NIH updates and other relevant news for researchers.

**Education/Training**

Education and training are offered through programs and monthly forums. For current education/training opportunities, visit [https://research.utmb.edu/educationprograms](https://research.utmb.edu/educationprograms)

Updates, reminders & new courses are communicated via the Research Listserv and the UTMB Daily Announcements.
Open Door:

Anyone in Research Services can be contacted at any time. Employee lists with phone and email information can be found under relevant sections.

Or you may visit our offices: 4.400 Rebecca Sealy Hospital
Mailing Route 0156
(409) 266-9400
Research.office@utmb.edu

Tools on our Website:

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Influent
http://utmb.influent.utsystem.edu
Grant Scoop
https://www.grantscoop.com
Proposal Central
https://proposalcentral.altum.com

Communicate with UTMB Research Community

Effort Reporting
https://research.utmb.edu/effort
Institutional Review Board
https://research.utmb.edu/irb
Institutional Animal Care and Use Committee
https://research.utmb.edu/IACUC
Policies & Procedures
https://research.utmb.edu/policies
Online Forms
https://research.utmb.edu/forms
Pre-Award Toolkit
https://research.utmb.edu/preaward-toolkit
Post-Award Toolkit
https://research.utmb.edu/postaward-toolkit
Training Grant
https://research.utmb.edu/traininggrants
Research Education Class Registration
https://my.utmb.edu/pstraining
Grants & Contracts Accounting
https://www.utmb.edu/finance/grantscontracts/default.asp
Research Services ListServ
https://its-listserv.utmb.edu
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<th>Principal Investigator</th>
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<th>Period of Support</th>
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<td>Bhavnani, Suresh</td>
<td>Leveraging Visual Analytics for the Identification of Patient Subgroups: Applications to Improve the Prediction of Hospital Readmission in the Elderly</td>
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<td>4/11/17 - 3/31/22</td>
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<td>Branski, Ludwik K</td>
<td>Growth Hormone Therapy for Muscle Regeneration in Severely Burned Patients</td>
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<td>Cain, Olga Z.</td>
<td>Epigenetic Modulation of Amyloid Beta-resistant Synapses in Non-demented Subjects with Alzheimer's</td>
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<td>Characterization and Novel Imaging of Skeletal Muscle Fibrosis in Patients with Chronic Kidney Disease</td>
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<td>Myostatin Alters Muscle Composition as the Result of an ACL Injury</td>
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<td>Myostatin alters satellite cell activity following a severe burn injury</td>
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<td>Patient Centered Outcomes Research in the Elderly</td>
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<td>Care of the Elder Hospitalized Patient: The Role of Hospitalists</td>
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<td>5/31/08 - 6/1/19</td>
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Current UTMB External Aging-Related Funding 2018
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<td>Comparative Effectiveness Research of Cancer in Texas (CERCIT) RP101207</td>
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<td>Hawkins, Brigit E.</td>
<td>Using a novel tau monoclonal antibody immunotherapy to prevent dementia after TBI</td>
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<td>Mechanisms of fenofibrate alone or combined with propranolol in burned patients</td>
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<td>Karmarkar, Amol</td>
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<td>Synaptic PLD1 Levels/Signaling is Elevated Through Epigenetic Regulation in the CNS of AD Patients as a Function of Disease Severity and Cognitive Decline</td>
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<td>Alzheimer's Association</td>
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<td>Kuo, Yong Fang*</td>
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<td>Assessing the Role of Nurse Practitioner in Primary Care of Older Adults</td>
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<td>Pattern, Variation and Outcomes of Opioid Prescription in Older Adults</td>
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<td>9/1/16-6/30/19</td>
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<td>Self-Monitoring Activity: A Randomized Trial of Game-Oriented Applications</td>
<td>American Cancer Society</td>
<td>11/15/14 - 11/14/20</td>
<td>$712,000</td>
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<td>LEVEL UP: Video Games for Activity in Breast Cancer Survivors</td>
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<td>09/01/14-08/31/18</td>
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<td>The Texas Resource Center on Minority Aging Research (RCMAR)</td>
<td>NIA P30</td>
<td>9/30/18-6/30/23</td>
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<td>Longitudinal Study of Mexican American Elderly Health</td>
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<td>04/15/15 - 04/14/20</td>
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<td>Systems Based Analysis of Host Factors that Contribute to Aging Pathogenesis</td>
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<td>The UNC-45 chaperone as a modulator of myosin biogenesis and function</td>
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<td>Preserving Muscle Mass and Function in Bedridden Older Adults</td>
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<td>NIAMS</td>
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<td>8/31/17-9/1/22</td>
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<td>National Inst of Diabetes &amp; Digestive &amp; Kidney Diseases Army Medical Research</td>
<td>03/15/15 – 03/14/20</td>
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<td>Suman, Oscar</td>
<td>Early Exercise in the Burn Intensive Care Unit Decreases Hospital Stay, Improves Mental Health and Physical Preformance</td>
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<td>Mitochondrial DNA: a target and effector of pulmonary epithelial cell injury</td>
<td>American Lung Association. Lung Cancer Discovery</td>
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<td>Taglialetta, Giulio</td>
<td>Mechanisms of Resistance to Cognitive Decline in Alzheimer's Disease</td>
<td>NIA R01</td>
<td>10/01/13 – 09/30/18</td>
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<td>Promoting resistance to Alzheimer's neuropathology with miRNAs from neural stem cell - derived exosomes</td>
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<td>Volpi, Elena*</td>
<td>Comparative Effectiveness of Health System-based versus Community-based Dementia Care</td>
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<td>Combining Testosterone Therapy and Exercise to Improve Function Post Hip Fracture</td>
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<td>A Phase I randomized clinical trial of in-hospital and post-hospital whey protein vs. isonitrogenous collagen protein vs. isocaloric placebo maltodextrin ...</td>
<td>National Daily Council</td>
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<td>6/1/10-4/30/20</td>
<td>$8,787,810</td>
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<td>Wong, Rebeca</td>
<td>The Mexican Health and Aging Study - II (MHAS)</td>
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<td>Health of Older Minorities - Training Grant</td>
<td>NIA T32</td>
<td>06/01/14-06/01/18</td>
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<td>Ye, Yumei</td>
<td>Ticagrelor improves remodeling, reduce apoptosis, inflammation and fibrosis and increase the number of progenitor stem cells after myocardial infarction</td>
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<td>9/1/17-8/31/19</td>
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<td>Yin, Yuhui Whitney</td>
<td>Dissecting Dual Function of Pol Gamma in mtDNA Replication and Oxidative Damage Repair</td>
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<td>Yin, Yuhui Whitney</td>
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<td>Pathogenic Role of EPAC1 Signaling in Retinopathy of Prematurity</td>
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<td>Zolochevska, Olga</td>
<td>Epigenetic Modulation of Amyloid Beta-resistant Synapses in Non-demented Subjects with Alzheimer's Neuropathy</td>
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<td>7/21/17-7/20/19</td>
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**TOTAL AMOUNTS**

* Indicates primary appointment in Geriatrics

Total Amount: $108,935,079

Current Year Total: $25,961,226
Aging Funding at UTMB, 2018

- Non-NIH funding, $5,391,425, 21%
- Other NIH Institutes, $11,000,717, 42%
- NIA, $9,569,084, 37%
# Forum on Aging Postdoctoral/Fellow Awards

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<tr>
<th>Name</th>
<th>Category</th>
<th>Academic Year</th>
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<td>Byron Hughes</td>
<td>Comparative Effectiveness/PCOR</td>
<td>2016-2017</td>
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<tr>
<td>Morteza Komeylian</td>
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<td>Chih-Ying Li</td>
<td>Rehabilitation Sciences</td>
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<td>Chih-Ying Li</td>
<td>Health Disparities</td>
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<td>Mauro Montalbano</td>
<td>Basic Science &amp; Neuroscience</td>
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<td>Tatiana Moro</td>
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<td>Raju Bishwakarma</td>
<td>PCOR &amp; Medical Effectiveness</td>
<td>2015-2016</td>
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<td>Rachel Deer</td>
<td>Clinical Trials &amp; Implementation</td>
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<td>Elfego Galvan</td>
<td>Clinical Trials &amp; Implementation</td>
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<td>Emily Hadley</td>
<td>Basic Science &amp; Neuroscience</td>
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<td>Ickpyo Hong</td>
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<td>Ayodele Osasona</td>
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<td>Brian Downer</td>
<td>Evaluation</td>
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<td>Addie Middleton</td>
<td>Clinical Research</td>
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<td>Miroslav Nenov</td>
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<td>Faranak Behnia</td>
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<td>Carrie Simmons</td>
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<td>Nina Tamirisa</td>
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<tr>
<td>Leyla Akhverdiyeva</td>
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<td>Kara Barber</td>
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<td>Juliana Bores</td>
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<td>Camille Brightwell</td>
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<td>Catherine Cooper Hay</td>
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<td>Colleen McKenna</td>
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<td>Jeffrey Snowden</td>
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<td>Paul Wadsworth</td>
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<td>Mary Margaret King</td>
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<td>Kay Kulkarni</td>
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<td>Michele Comerota</td>
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<td>Amit Kumar</td>
<td>Rehabilitation &amp; Disability</td>
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<td>Figaro Loresto</td>
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<td>Jacob Moran</td>
<td>CER/PCOR</td>
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<td>Ashley Nilson</td>
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<td>Joseph Saenz</td>
<td>Minority Health/Health Disparities</td>
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<tr>
<td>Samantha Sheller</td>
<td>Basic Sciences</td>
<td>2014-2015</td>
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</table>
The Edward J. and Ellie Weisiger Lefeber, Sr. fund will be used to endow an annual academic prize for students in the School of Medicine at UTMB who earn the privilege of completing a special elective course in gerontology within the Department of Internal Medicine during their fourth year of studies at the School. The endowment will be used to fund a competitive prize of $500 with a match of $500 from the Sealy Center on Aging.

The successful applicant for the Lefeber Prize is given to the student who has demonstrated scholarly work in aging research. This may include participating in the Geriatric Research Elective, was a scholar in our Medical Student Training in Aging Research Program (MSTAR), and/or participated in mentored research related to aging.

Faculty members may nominate eligible students by submitting a one-page letter of nomination giving a brief explanation of:

- Student’s interests in Gerontology
- His/her learning objectives for the elective course

Nominations will be judged on the basis of clarity and feasibility by a committee made up of the Director of the Division of Geriatric Medicine, physicians from the Division of Geriatric Medicine, and faculty members from the Sealy Center on Aging.

The selected student shall be known as the Lefeber Scholar in Gerontology.

**Application Deadline: February 1, 2019**

Please forward nominations to Stephanie Burt at (409) 266-9675 or stburt@utmb.edu

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**Lefeber Scholar Awardees**

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<td>Gloria Li</td>
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<td>Chiemeziem G. Eke</td>
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<td>Mohammad Ali</td>
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<td>Travis Urban</td>
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