

ISSUE 82 | WINTER 2022

A HEALTHY HEART DURING THE HOLIDAYS

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AVOID HOLIDAY HEART SYNDROME

Deadly heart attacks increase during the winter holiday season. One study has found spikes in heart attacks around Christmas and New Year's Day.

These heart issues can happen because of overindulging in alcohol and salty foods. Since the holidays are the time of celebrating with salty snacks and festive drinks, feeding the tendency to overdo it, is where the term holiday heart syndrome derives from. People with preexisting heart issues are more likely to experience holiday heart syndrome. However, it can happen to people without any heart issues.

The salt and alcohol can cause your heart to beat irregularly, also known as atrial fibrillation. **More information about A Fib and its connection to alcohol can be found on page 4.**

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Sarver Heart Center is part of the University of Arizona Health Sciences. the statewide leader in biomedical research and health professions training.

INTERIM DIRECTOR

Carol C. Gregorio, PhD

SENIOR DIRECTOR. DEVELOPMENT

LaToya Singletary Senior Director of Development Email: lsingletary@arizona.edu Office: 520-626-4518

DIRECTOR OF COMMUNICATIONS

Colleen Menadier Email: CMenadier@arizona.edu Office: 520-626-4083

DESIGN/PRODUCTION

Colleen Menadier If you need this information in an accessible format (braille, digital, tape or large print) please contact Colleen Menadier, 520-626-4083

Please visit the UArizona Sarver Heart Center online: www.heart.arizona.edu

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MESSAGE FROM THE INTERIM DIRECTOR

As the year 2022 comes to a close, so does a year of transformation at the Sarver Heart Center. Despite the changes, it's been a successful year for the Center. We have a lot of exciting projects on the horizon: the return of the Green Valley lecture series, onboarding of a prominent Cardiologist Dr. James Liao as the new Chair of the Department of Medicine, new clinical trials, and the search for the next Director. Our dedication to research, education, and patient care remains the same. We are dedicated to a future free of cardiovascular disease.

I want to thank you all for your continued support of the Sarver Heart Center, and wish you a holiday season of good health, happiness, peace and special times with your friends and family.

Sincerely, Carol C. Gregorio, PhD Interim Director, Sarver Heart Center



Fellows of the Sarver Heart Center gathered for a photograph to commemorate the end of Orientation in September.



The Saver Heart Center's Minority Outreach Program provided CPR and AED education at the 2022 Delta Sigma Theta Sorority, Inc. Tucson Chapter's showcase.



Congratulations to senior MD/PhD student Ike Chinyere, PhD, who was one of 10 outstanding medical students nationwide to receive a Biosense Webster Inc. medical student scholarship through the Association of Black Cardiologists.



A fond farewell to Paul Fenster, MD (middle left), and Karl Kern, MD (middle right), who both retired from the Sarver Heart Center this summer after decades of dedicated patient care and education. Both are pictured with their wives at a reception held in July.



STRESS AND THE HEART

When thinking of the holiday season, it brings about memories with family and friends, great food, and the spirit of giving; these experiences can build long lasting friendships for years to come. However, several major stressors come with the season. Getting the right gift, difficulties of the chaotic travel season, increased financial difficulties, along with the winter season and reduced daylight all add a layer of significant stress in our lives.

Such stress can become chronic and lead to higher rates of heart disease. Several studies have suggested job-related stress can increase the risk of heart disease by 20 to 30%. But even short-term stressful events can have impact on heart disease with up to a twoand-a-half-fold increase risk of having sudden cardiac events such nightly will not only help balance as a heart attack than during times of normal stress levels.

Stress leads first to poor cardiovascular habits, such as a poor diet and sedentary lifestyle, which leads to higher rates of hypertension, obesity, and diabetes, major risk factors for heart disease. Stress additionally leads to systemic inflammation which directly weakens heart vessels over time leading to a higher rates of heart attack and stroke. Therefore, the joys of reuniting family and holiday festivities may not be in the heart's best interest if stress levels rise. Therefore, here are a few suggestions this holiday season to keep your heart healthy.

Exercise: Physical activity is thought of in many cases as meditation in motion releasing endorphins known to reduce stress rest. Our hearts depend on it.

levels, improve depression and anxiety, and build self-confidence. Further, regular exercise is known to reduce the incidence of heart disease by up to 14%. However, individuals exercise significantly less than during the winter season than other season of the year. Therefore, maintaining your physical activity during this holiday season may be the best gift of all.

Sleep: Cortisol, one of the main hormones involved in our response to stress, is strongly connected with our sleep cycle and circadian rhythm. Alterations in sleep quality and quantity lead toward inappropriate cortisol levels. Long term levels of high cortisol levels can lead to higher rates of hypertension, diabetes, and obesity. Therefore getting 7-9 hours of high-quality sleep your stress hormone levels but also likely increase your chance of keeping your heart healthy.

Connect: The holiday season is about connection. Reuniting with family and loved ones to develop strong relationships. These relationships not only enrich our lives socially but may improve our heart's health. Social isolation can be a significant cause of stress and has been noted individuals with poor relationships may lead to a 30% increased risk of heart disease. Therefore, connecting and building strong relationships may strengthen your heart not only emotionally but also physiologically.

This holiday season and beyond, let go of some of the expectations and less important tasks. Set your priorities and not worry about the

SEAN MCCANDLESS. MD



ABOUT THE AUTHOR

Sean Mccandless, MD is a Sarver Heart Center Cardiovascular Disease fellow. He was certified with the American Board of Internal Medicine in 2020

Stay away from high-stress situations. Scale down your "to do" list. Having too much on your plate can lead to exhaustion, anger, and emotional stress, all which cause strain on the heart.





ABOUT THE AUTHORS

Mahesh Balakrishnan, MBBS is a

Electrophysiology Fellow at the Sarver Heart Center, continuing his education at the Sarver Heart Center after completing his fellowship in Cardiovascular Disease with the Sarver Heart Center in 2022. Dr. Balakrishnan has been certified with the American Board of Internal Medicine since 2019.



Jacob Klewer, MD is a Cardiovascular Disease Fellow at the Sarver Heart Center. He received his medical degree from the University of Arizona College of Medicine - Tucson in 2018. Dr. Klewer completed his Internal Medicine residency at the University of Utah.

ALCOHOL AND ATRIAL FIBRILLATION MAHESH BALAKRISHNAN, MBBS

& JACOB KLEWER, MD

consume alcohol and 20

percent of drinkers binge on

alcohol.¹Alcohol consumption

can be defined as: light (less

than 7 standard drinks/week),

drinks/week) and heavy (more

than 21 standard drinks/week).

1 standard drink is roughly 12

Consuming 5 or more drinks

on an occasion for men or 4

drinking and is associated

with holiday heart syndrome.

are commonly admitted to the

hospital with atrial fibrillation

which resolves usually within

others may present 12 to 36

hours later and can be seen

in both habitual drinkers and

in infrequent drinkers. More

24 hours. Patients can develop AF at the time of intoxication,

Patients with this condition

or more drinks on an occasion

for women is considered binge

grams of alcohol.

moderate (7 to 21 standard

Atrial fibrillation (AF) is the most common abnormal heart rhythm worldwide and is estimated to affect 6 million people in the US. 1 in 4 people above the age of 40 years are likely to develop AF during their lifetime. AF originates most commonly from the upper left chamber of the heart. Stroke and heart failure are the most feared complications of atrial fibrillation and can have a profound impact on quality of life.

High blood pressure, diabetes mellitus, obesity, sleep apnea, heart attack. heart failure, habitual alcohol consumption and smoking are well-established risk factors for AF. Alcohol is the most common trigger of AF reported by 35 percent of patients. Approximately 53 percent of Americans regularly recent studies have shown

1. Voskoboinik, Aleksandr, et al. "Alcohol and atrial fibrillation: a sobering review." Journal of the American College of Cardiology 68.23 (2016): 2567-2576.

SYMPTOMS OF HOLIDAY HEART SYNDROME

- Heart palpitations
- Shortness of breath
- Chest pain
- Dizziness
- Lightheaded



that habitual moderate alcohol consumption also seems to have a similar risk of AF as in heavy drinking and binge drinking. For each extra alcoholic drink per day, AF incidence increased 8 percent.

Mechanisms by which alcohol triggers and maintains AF include changes in the electrical conduction system of the heart, swelling of the heart muscle cells, direct toxic effects of alcohol and its metabolite aldehyde and changes in the nervous system which regulates heart rate, blood pressure and heart function. Moderate or more alcohol consumption in the long term can cause the structural changes in the heart to become permanent.

Heavy habitual alcohol consumption is a more important risk factor than obesity or hypertension for AF. In patients with prior AF, the risk of AF recurrence was consistently higher with light to moderate habitual consumption. There is a higher risk of progression from intermittent to persistent AF and higher risk of stroke

ablation procedures.

() ()

US Standard Drink Sizes



with moderate or more habitual alcohol consumption. Alcohol consumption also increases the risk of recurrence of AF after

Overall, the risk of developing AF is highest immediately following alcohol consumption and with long term, moderate

or higher habitual alcohol consumption. Reduction in alcohol consumption in patients with AF can decrease the recurrence of AF and the time spent in AF. Limiting alcoholic beverages to a maximum of 2 drinks daily for men and 1 drink for women is recommended.

CENTRAL ILLUSTRATION: Habitual Alcohol Consumption: Long-Term Risk of Atrial Fibrillation and Cardiovascular Mortality





HEART-HEALTHY DIET DURING THE HOLIDAYS

ABOUT THE AUTHOR

Claire Luo, MS, RD, CSO is a registered dietitian at Banner University Medical Center - Tucson. She joined the transplant team as an Advanced Heart Failure and Post-Transplant Dietitian.

Her nutrition philosophy is to help patients develop a healthy, sustainable relationship with food. Diet is a cornerstone of health, and she aims to help patients make changes one small step at a time so that healthy habits can last a lifetime.

In her free time, Claire loves to snowboard, ski, cycle and cook noodle dishes.



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It's heartwarming just thinking about parties and gatherings with friends and family, sharing meals and laughter. As a dietitian, I often hear from my patients that they experience "set-backs" with their healthy eating during the holidays because their meals tend to be "too heavy" with a lot of fatty foods, salty foods, and sweets.

Following a heart healthy diet over the holidays doesn't require you to avoid parties or eat bland foods. Here are some tips for keeping our holiday meals healthy for the heart, while still enjoyable to the taste.

But first, what is a Heart Healthy Diet?

The heart healthy diet emphasizes eating more vegetables, fruits, nuts, beans, and whole grains, but limiting salt and saturated fat. Just like any other day during the year when you try to eat at least five servings of vegetables and fruits a day, your holidays are no exception.

Vegetables and fruits are nutrient-dense because they are full of vitamins, minerals, antioxidants, and fiber. Red, orange, yellow, dark green, blue, or purple vegetables and fruits are especially good for your health. Examples of these colorful vegetables include all leafy greens, asparagus, Brussels sprout, broccoli, cauliflower, cucumber, green beans, bell peppers, tomato, zucchini, and eggplant. Some examples of fruits

CLAIRE LUO, MS, RD, CSO REGISTERED DIETITIAN

include apples, berries, oranges, grapes, and peaches, just to name a few.

You can further increase your fiber intake by including whole grains, beans, nuts, and legumes in your daily meals.

An important component of the heart healthy diet is to moderate sodium intake. The American Heart Association recommends no more than 2,300 milligrams of sodium in a day, which is equivalent to one teaspoon of salt. Excess sodium intake increases your risk of high blood pressure, stroke, heart attack, heart failure, and kidney disease. Reduce or avoid adding salt to your cooking is a great start, but sodium can sneak up on you in a lot of foods. High sodium foods usually come from canned foods and soups, packaged foods, cured meats, cold cuts, pickled products, and of course, heavily salted meals.

If an ingredient comes in a can, iar. or package, it's likely that it has been processed with added sodium. So check the Nutrition Facts label before you buy or use a product and pay attention to the sodium content per serving! Choose foods that have less than 140 milligrams of sodium per serving.

In addition to being modest with your sodium intake, a heart healthy diet also limits foods high in saturated fat, such as fried food, cheeses, cream, and meats.

HEART-HEALTHY TIPS DURING THE HOLIDAYS



COOKING TIPS

1. Modify Your Favorite Family Recipes

•Reduce the salt in your recipes by half. •Replace high-sodium ingredients like canned or processed products with fresh ingredients or "low-sodium" products. Replace canned vegetables with fresh or frozen vegetables. If your recipe calls for canned broth, buy canned broth that says "low sodium" or try diluting the broth.

•Whenever possible, add a couple cups of vegetables (examples provided above) to your recipes and make your dishes colorful.

•Avoid adding salted meats or cream to vour vegetable dish.

•Use olive, canola, or avocado oil in place of butter, but be mindful of how much oil vou add.

•Swap out the heavy cream with reduced-fat milk (2%, 1%, or non-fat).

2. Use Sodium-Free Seasoning

•Spice up your food with herbs and spices in place of salt. For example, fish goes well with paprika, basil, bay leaf, dill, pepper, or turmeric, while chicken dishes taste good with basil, cloves, rosemary, parsley, sage, or thyme.

•Be careful with pre-packaged spice mixes because they often contain salt. Again, read the Nutrition Facts label before purchasing spice mixes.

•Perk up the flavors of your dishes by adding citrus juice, garlic, ginger, scallion, onion, or vinegar.

EATING TIPS AT PARTIES

1. Eat Before the Parties

•To keep you from feeling hungry and make "un-mindful" food choices, eat a small nutrient-dense low-calorie meal or snack like a spinach salad topped with roasted almond slices before the party. This tip may help you make healthier food choices during the party.

2. Load Up on the Colorful Vegetables and Fruits

•When you are at a party and putting food on your plate, make your plate colorful by filling at least half of your plate with colorful vegetables and fruits (listed above). Then lightly fill the other half of your plate with protein foods, carbohydrate, and dessert.

3. Bring a Vegetable Dish to the Party

•Prepare a heart healthy vegetable dish, whether it's a salad or roasted seasonal vegetables, to share with the party. That way you will always have something to fill half of your plate.

4. Hydrate with Water

•Water is the best choice for hydration. If you need more flavors to your water, try adding some fresh citrus or cucumber to make your water more exciting. •If you choose to drink alcohol, the

American Heart Association recommends less than two drinks per day for men and less than one drink per day for women. Choose no-calorie or low-calorie options for sodas and juices if they are available.

5. Eat Only If You Are Hungry

•Remind yourself to only eat when you are hungry. That's why I have Healthy Eating Tip #1 above – it'll keep your hunger level low while nourishing you with low-calorie, nutrient-dense foods.

•Try to focus on conversations and holiday activities instead of the food.

The bottom line is, enjoy your favorite foods in moderation and spending time with your loved ones.





Story and photographs courtesy of Banner University Medical Center - Tucson

Immediately upon her birth on April 27, 1994, Alexandria Port was taken into the University Medical Center newborn intensive care unit. An ultrasound showed that Alexis was born with a congenital heart defect, called tetralogy of Fallot,

which reduced blood flow to her lungs, resulting in oxygen-poor blood flowing out into her body and a "blue" color to her skin. While there was not a need for an emergency surgery. Alexis' journey was just beginning.

Her mother Kathy recalls Alexis requiring monthly doctor appointments for the first year of her life. The family moved from Tucson to Illinois and on May 5, 1995, a few days after her first birthday, Alexis had her first open heart surgery to repair

the blood flow within her heart. After the surgery, her doctor said that Alexis would eventually need to have additional surgeries to replace her pulmonary (lung) valve, which is typical for patients with tetralogy of Fallot. Alexis' first surgery was successful, and Kathy said Alexis had so much more energy, it was as if she had been shot out of a canon.

Though the first surgery was successful, Kathy wanted to wait as long as she before Alexis had any additional open heart surgeries, knowing that the risk would increase with each one.

The family moved back to Arizona and began seeing Sarver Heart Center member **Dr. Scott Klewer**, a Pediatric and Adult Congenital Heart Disease Cardiologist at Banner – University Medicine in Tucson. Recently, a new, less invasive treatment system was FDA approved that would no longer require open-heart surgery to replace Alexis' pulmonary valve. called a catheter through a large Dr. Klewer informed the family about this exciting advancement and referred them to his Sarver Heart Center colleague Dr. Michael Seckeler, director of the Pediatric and Adult Congenital Cardiac Cath Laboratory at Banner University Medical Center – Tucson. Kathy was intrigued at the thought of a less invasive treatment that would let Alexis heal faster and spend less time in the hospital.

The Edwards SAPIEN 3 Transcatheter Pulmonary Valve System with Alterra Adaptive Prestent gained FDA approval in December 2021. The system consists of a stent (named Alterra), and an artificial heart valve (named Sapien 3) and is designed to treat patients with a affecting the right ventricular outflow tract and pulmonary valve who need surgical pulmonary valve replacement. However, the new system allows replacement of a poorly functional pulmonary valve without open heart surgery.

The procedure is done by a



specially trained cardiologist who inserts a tube-like device vein, typically in the leq. The Alterra stent is pushed through the catheter in the blood vessels until it reaches the pulmonary valve. The stent is released and anchors to the patient's heart. Another catheter is then inserted through the same blood vessel until it reaches the Alterra stent. The artificial valve is expanded by a balloon to anchor inside the Alterra stent. Once the new valve is in place, it functions the same as the old valve, opening and closing like a door to let the blood flow in the correct direction.

hit and the family waited for an ideal time to schedule the appointment. During COVID, Alexis gained weight and her blood pressure began to increase so the family

First Alterra placement to be performed in the state of Arizona. Alexis was out of the hospital within 24 hours. variety of congenital heart defects was anxious to get the procedure done as soon as it was deemed safe. Dr. Seckeler met with the family and plans were made for the procedure.

> "This is a minimally invasive heart cath procedure to place a new pulmonary valve without having to do open heart surgery. Though

transcatheter pulmonary valve replacement has been around for more than 10 years, the Edwards Sapien 3 Transcatheter Pulmonary Valve System with Alterra Adaptive Prestent is a newer device that provides us with the ability to treat even more patients like Alexis who were not candidates for the procedure with the older technology," said Dr. Seckeler.

On July 22, Dr. Seckeler performed the procedure, and Alexis' procedure was the first Alterra placement to be performed in the state of Arizona. Alexis was out of the hospital within 24 hours and has recovered well. Her The COVID pandemic mother couldn't be happier with the outcome, and there is a good chance that Alexis will never need another open heart surgery for congenital heart disease again.

> The Sarver Heart Center and team at Banner University Medical Center – Tucson continues to advance the field of congenital heart disease through research and embracing exciting clinical innovations like the Alterra and Sapien 3 to help patients live better, longer lives with their congenital heart disease.

APPOINTMENT OF A NEW DEPT. OF MEDICINE CHAIR



JAMES LIAO, MD

The UArizona College of Medicine - Tucson announced the hiring of a new Chair for the Department of Medicine.

James Liao, MD served as the Chief of the Section of Cardiology at the University of Chicago since 2012. He helped launch the University of Chicago Medicine Heart and Vascular Center and served as Medical Director.

Dr. Liao has expertise in cardiovascular disease prevention, vascular medicine, and lipid disorders. His research interests focus on vascular biology, including the role of statins in stroke and atherosclerosis.

He is expected to begin his new position on January 16, 2023. Dr. Liao will play an integral part in the search for the next Director of the Sarver Heart Center.

WELCOME TO OUR NEWEST SARVER HEART MEMBERS



Zhiyu Dai, PhD Director of Translational Endothelial Research UArizona College of Medicine - Phoenix

Dr. Dai studies pathogenesis, delineating mechanisms, and identifying therapeutic targets for treatment of pulmonary arterial hypertension.



Salma Patel, MD, MPH Assistant Professor UArizona College of Medicine - Tucson

Dr. Patel is a boardcertified sleep medicine physician-scientist. She studies cardiorespiratory interactions in obstructive sleep apnea.



Shawn Youngstedt Research Professor, UArizona Professor Edson College of Nursing, Arizona State University

Youngstedt is working on a Department of Defensefunded study on ways to adjust to jet lag and how it impacts the heart.



february 16



MARCH 16



Sarver Heart Center



2023

Green Valley

SPEAKER SERIES

10:30 AM - 11:30 AM CANOA HILLS SOCIAL CENTER

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Heart Murmurs and Heart Failure

ARKA CHATTERJEE, MD, FACC, FSCAI

Associate Director, Structural Heart Program Associate Professor, UArizona College of Medicine - Tucson

Cardiac Arrhythmias: Current and Emerging Therapies **PETER OTT, MD**

Cardiology Electrophysiology Assistant Professor, UArizona College of Medicine - Tucson



THE UNIVERSITY OF ARIZONA The University of Arizona Health Sciences Sarver Heart Center PO Box 245046 Tucson, AZ 85724-5046



REMEMBERING SARVER HEART CENTER SUPPORTER TOM SULLIVAN SR.

The Sarver Heart Center honors the life and legacy of longtime supporter Thomas Warren Sullivan Sr. (right), who died at home on Sunday, November 6, 2022.

In 2006, Tom and his wife Sabina made a generous gift to establish the Tom and Sabina Sullivan, Sr. Endowed Chair for Prevention and Treatment of Heart Failure. Asked about their motivation, Tom stated "My father passed away because of heart failure. Sabina and I really decided to make our gift after spending

time visiting the Sarver Heart Center. We are impressed by the persistence with which its members have pursued their goal – a future free of heart disease and stroke. The center's successful history and the promise of future accomplishments were very important factors in our decision as well." Mark J. Friedman, MD (left), served as the Sullivan Endowed Chair until his retirement in early 2022.

He is survived by his wife, Sabina, two children, three stepchildren and 11 grandchildren.

TOM SULLIVAN SR. MARCH 4, 1934 - NOVEMBER 6, 2022