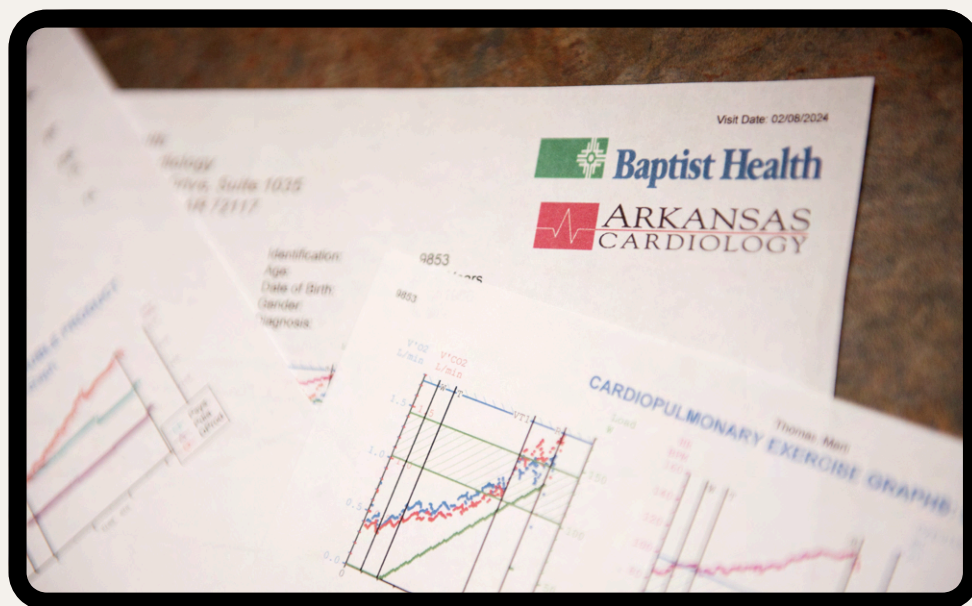




**Baptist Health**  
HEART INSTITUTE

# EXERCISE AND SPORTS CARDIOLOGY

ArCardSports.com  
@ArCardSports



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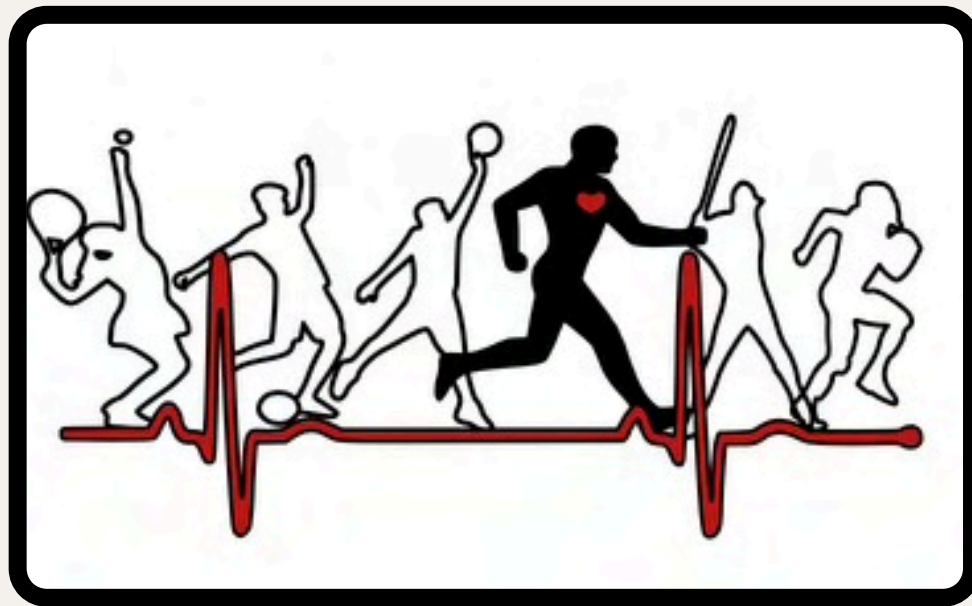
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# EXERCISE AND SPORTS CARDIOLOGY

## OUR TEAM

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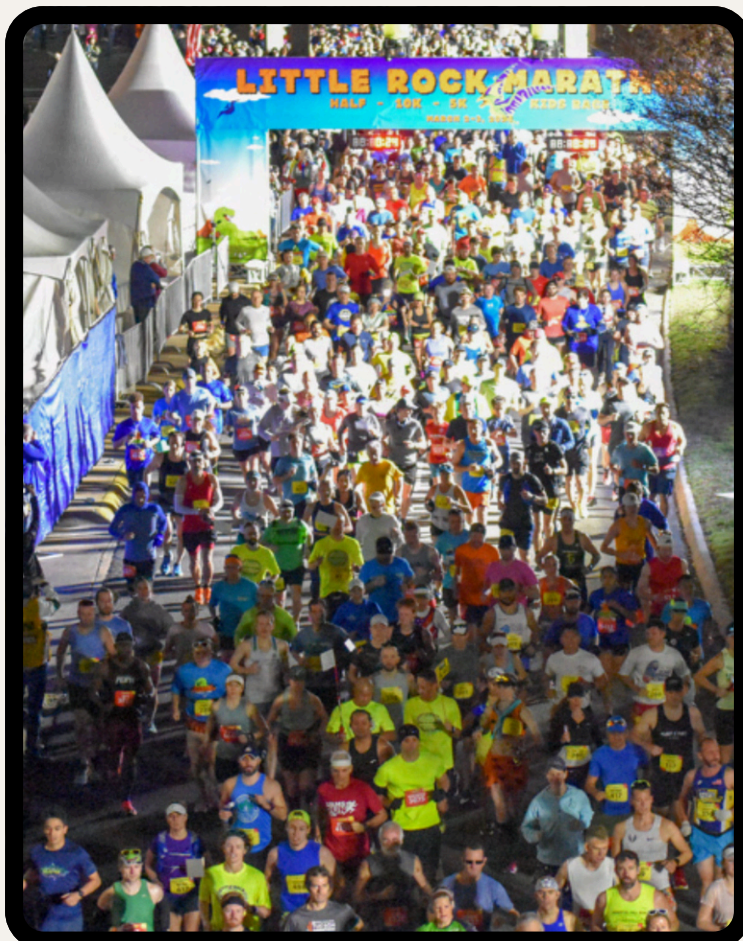
A graduate of the University of Arkansas-Fayetteville and UAMS. Residency at Keesler Medical Center in Biloxi, MS. Fellowship at Wilford Hall Medical Center at Lackland Air Force Base in Texas.

### CHARLES R. CALDWELL, MD, FACC

A graduate of Hendrix College and UAMS. Residency at Emory University in Atlanta, GA. Fellowship at UAMS.

### KAILIE ENGLISH, EXERCISE PHYSIOLOGIST

A graduate of the University of Central Arkansas with her Bachelor's degree in Exercise & Sports Science.



## OUR PARTNERS

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PARKER NORRIS, MD, FACC  
LENSEY SCOTT, MD





## NOTES FROM OUR TEAM

We are focused on the evaluation and care of:

- Patients with heart disease who want to start or resume exercise or athletic activities.
- Patients who want an exercise prescription to reduce their cardiovascular risk.
- Athletes with exercise-induced symptoms.
- Athletes referred for screening prior to taking part in high-level activities.
- Athletes looking to optimize performance.
- Tactical athletes (policemen, fireman, military) who are having symptoms, or need clearance or routine cardiac assessment

Common issues addressed:

- Abnormal electrocardiogram (EKG), stress test, or echocardiogram in athletes or active patients.
- Chest pain, fainting, palpitations, or shortness of breath with exercise.
- Unexplained decrease in exercise tolerance.
- Abnormal sports screening test.

Testing modalities include:

- Cardiopulmonary exercise testing (VO<sub>2</sub> Max testing)
- Stress tests
- Echocardiograms
- Heart rhythm monitors
- Cardiac CT
- Cardiac MRI
- Cardiac catheterization



# ArCardSports In The Media

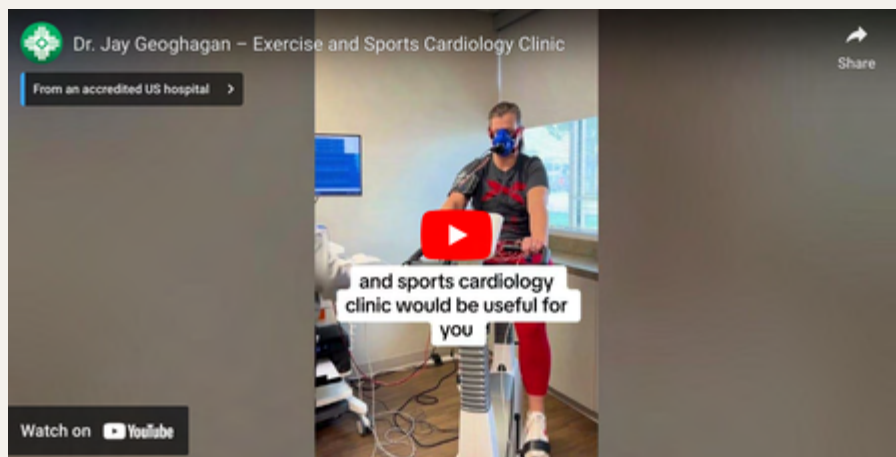
## KARK TV- LITTLE ROCK

<https://youtu.be/SjWcV6jvLi8?si=4saDek6tK>



## OVERVIEW OF EXERCISE AND SPORTS CARDIOLOGY CLINIC

<https://youtu.be/MElQb0-8LwY?si=MfAtRjoT7rEt1P0>



## KATV- Little Rock

<https://www.katv.com/news/health/new-sports-cardiology-clinic-to-focus-on-cardiovascular-risks-for-athletes>



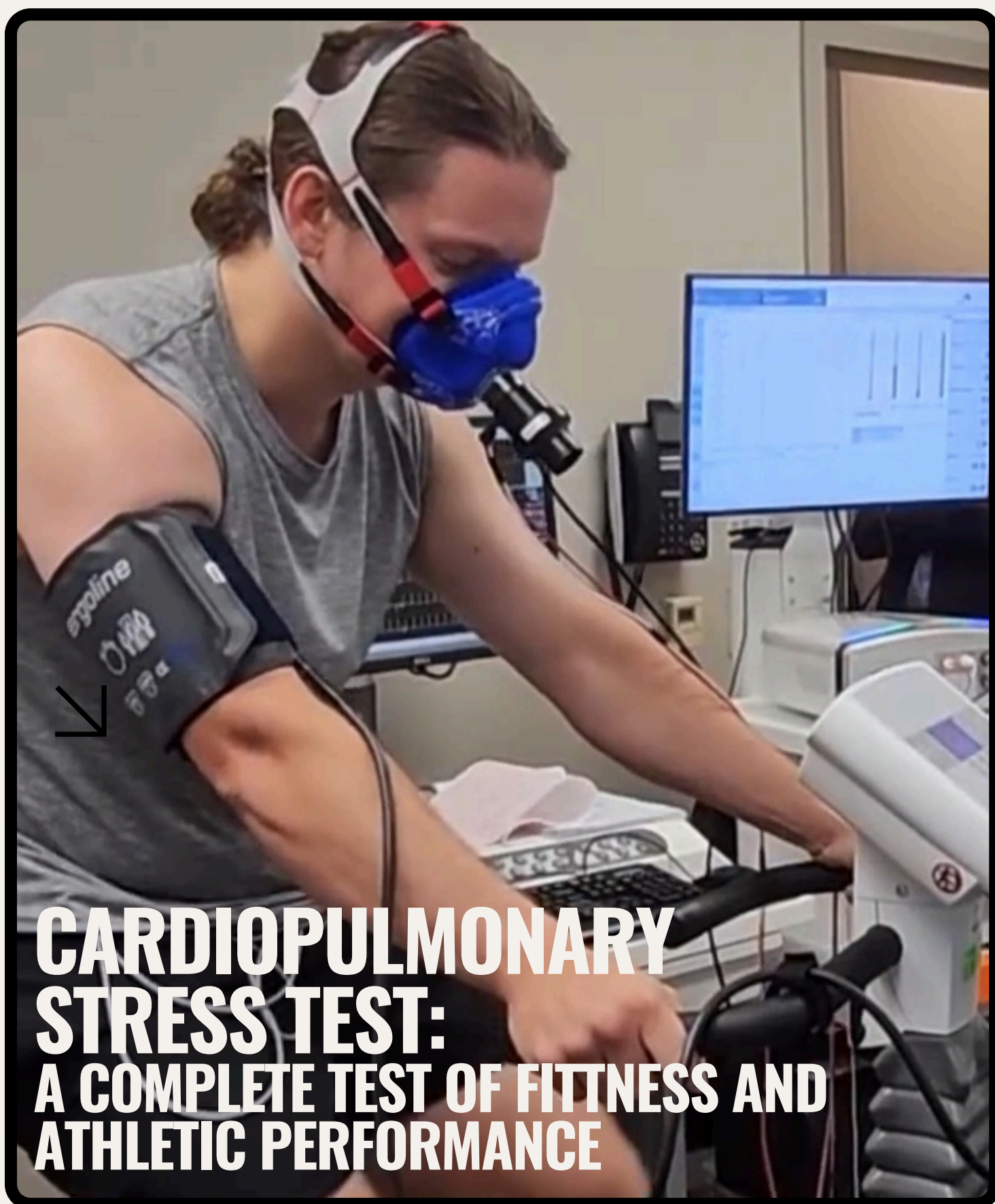
### New sports cardiology clinic to focus on cardiovascular risks for athletes

High profile incidents of sudden cardiac arrest among are raising awareness about the need for specialized cardiovascular treatment for athletes. Arkansas Cardi

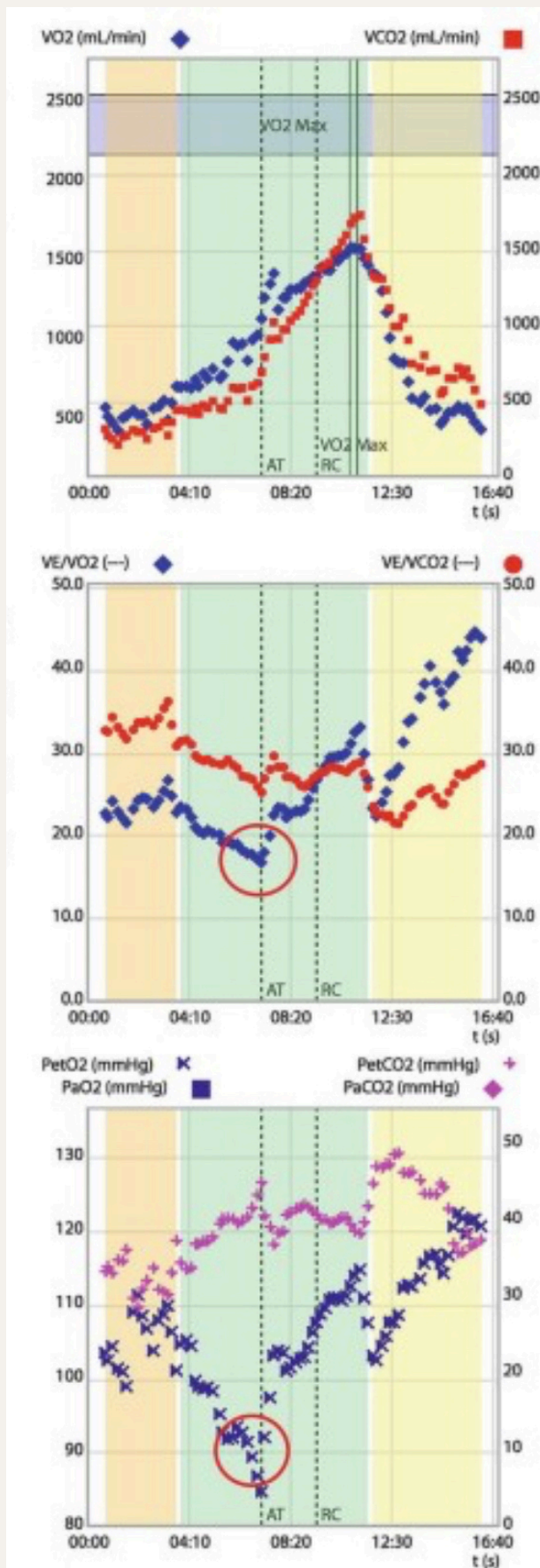
KATV / Feb 22

**FIND OUT MORE INFORMATION AT**  
**ARCARDSPORTS.COM**





# **CARDIOPULMONARY STRESS TEST: A COMPLETE TEST OF FITNESS AND ATHLETIC PERFORMANCE**



Cardiopulmonary stress testing (CPET) can be performed using a stationary bike or a treadmill to simulate your usual exercise.



A cardiopulmonary stress test, also known as a metabolic exercise stress test (CPET), measures how the heart and lungs respond to physical activity. The test measures the levels of oxygen and carbon dioxide in the blood, as well as how much air the lungs can take in. It also measures other parameters, including Ventilation, Oxygen consumption ( $\text{VO}_2$ ), Carbon dioxide production ( $\text{VCO}_2$ ), Breathing pattern, and Anaerobic threshold (AT).

A cardiopulmonary stress test measures oxygen input and carbon dioxide output. It also checks your anaerobic threshold (AT), which is the point when the metabolic demands of physical activity go beyond the oxygen intake needed to function. In particular, your anaerobic threshold can indicate how much exercise you can feasibly handle. With your physical limit taken into consideration, a trainer can create the most responsive and effective exercise plan for you.

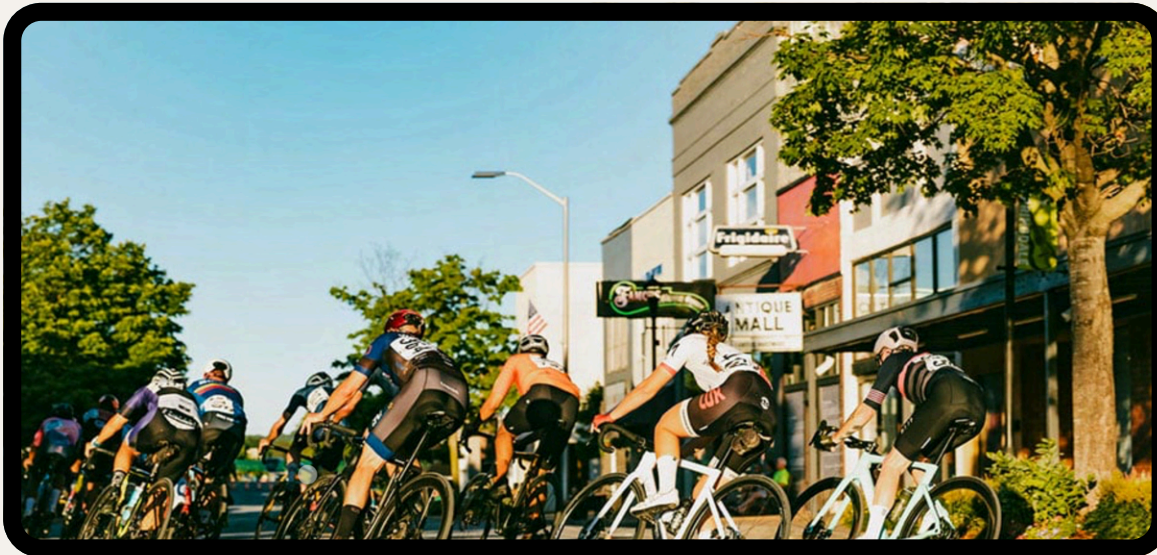
A CPET is similar to an exercise stress test but also measures lung function, including:

The amount of oxygen your body uses during exercise.

The amount of carbon dioxide you produce.

Your breathing pattern.





## TRAINING USING CARDIOPULMONARY EXERCISE TESTING (CPET) DATA:

### “WHAT’S MY VO2 MAX?”

Many athletes will be familiar with the term ‘VO2 max’, and most will know it’s a metric that differentiates professional athletes from amateurs. Simply put, VO2 max is a measurement of how much oxygen your body can use at maximal sustained output, so it is crucial in determining your ability as an athlete.

Since a high VO2 max is widely considered a strong prerequisite for athletic performance, let’s take a closer look at what it is, why it matters, and whether you can improve your VO2 max.

Broadly speaking, power athletically can be generated in two ways: ‘aerobically’ (using oxygen) and ‘anaerobically’ (without oxygen). The maximum rate of oxygen consumption is your VO2 max.

In other words, your VO2 max defines the size of your aerobic engine. The bigger this engine is, the more power can be produced via this energy system. VO2 max is usually measured as the volume of oxygen (ml) consumed per kg of body weight per minute, or ml/kg/min for short.

VO2 max is measured directly in the CPET lab. However, you can determine how your VO2 max might change by testing your maximum power over five to six-minute efforts or taking a ramp test using a smart training app. The Apple Watch will also give you an estimated VO2 max after prolonged exercise.

In contrast, generating power ‘anaerobically’ is a time-limited system. Although quick to deliver energy, it produces by-products that cause fatigue. For example, to generate 300 watts of power, it’s better to produce that power aerobically rather than anaerobically because this will result in fewer fatiguing by-products and allow you to sustain that power for longer.

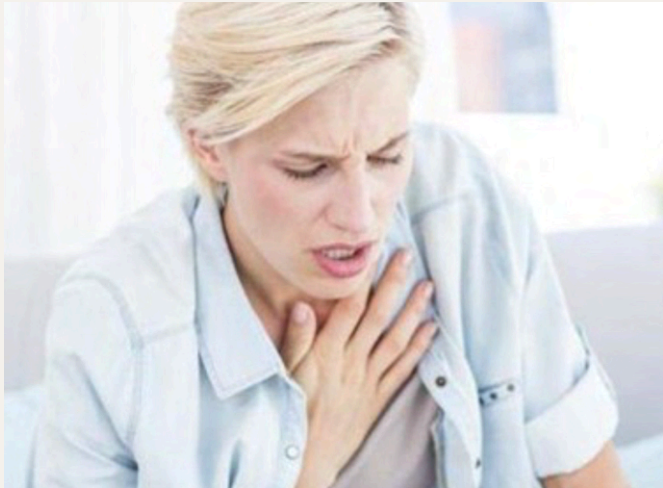
Drilling down into the details, the key benefits of a high VO2 max include:

1. The ability to sustain medium-hard power outputs for longer due to lower production of fatiguing by-products
2. Improved maximal lactate steady-state (sometimes referred to as the lactate or anaerobic threshold), Functional Threshold Power (FTP), or Critical Power, which translates to maximal steady-state power
3. Better recovery from hard efforts, due to faster clearance and processing of fatiguing by-products

In short, VO2 max plays an important part in performance across almost all athletic disciplines that require sustained activity with bursts of power.

## **“I’M SHORT OF BREATH BUT MY CARDIAC TESTS AND MY LUNGS TESTS ARE GOOD. WHY AM I SO SHORT OF BREATH?”**

The medical term for shortness of breath is dyspnea. To determine the cause(s) of their dyspnea, patients traditionally have undergone a series of standard tests. This battery of tests can help determine or rule out common causes of dyspnea, but not for diagnosing less-common causes. A cardiopulmonary exercise test (CPET), however, can detect rarer conditions, such as exercise-induced pulmonary artery hypertension, exercise-induced heart failure with preserved ejection fraction, pre-load failure, and certain neurologic and muscular disorders.



There are some reasons why it’s not safe for you to have a cardiopulmonary stress test. Healthcare providers call these reasons “contraindications.” This test may not be safe for you if you have:

- Acute infection (including a cold or flu).
- Acute myocarditis or pericarditis.
- A recent history (within 30 days) of a heart attack.
- Deep vein thrombosis (DVT) in your legs.
- Endocarditis.
- Hypertrophic cardiomyopathy.
- Kidney failure.
- Moderate or severe heart valve stenosis.
- A pregnancy that’s advanced or complicated.
- Severe hypertension.
- Severe pulmonary arterial hypertension (PAH).
- Uncontrolled arrhythmias.
- Uncontrolled heart failure.
- Unstable angina.





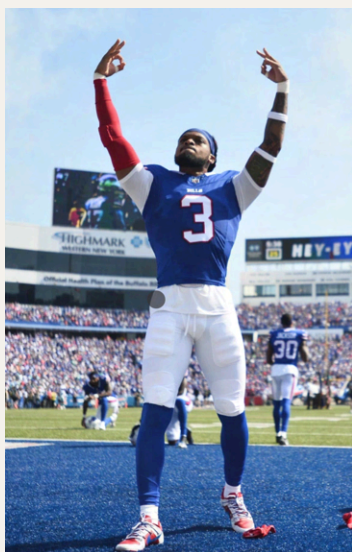
# AN ATHLETE PASSES OUT: WHAT HAPPENS NEXT?



Damar Hamlin collapses live on Monday Night Football after sustaining a hit to his chest and suffering commotio cordis.

**“DID WE WIN?” DAMAR HAMLIN WROTE TO ASK HIS DOCTORS.**

**HIS DOCTORS TOLD HIM: YES, DAMAR... YOU WON. YOU WON THE GAME OF LIFE.**



**DAMAR HAMLIN RETURNS TO THE FIELD ON OCTOBER 1, 2023 NINE MONTHS AFTER HIS COLLAPSE.**



Damar Hamlin passed out live on Monday Night Football in a game witnessed by millions. He received CPR for 9 minutes and had an AED shock that finally restored his heart rhythm to normal. He was eventually diagnosed with commotio cordis, a condition caused by the right level of a traumatic blow, occurring at just the right location during the exceedingly short 20-millisecond interval when the heart is resting and vulnerable. That blow caused his heart to go into a potentially lethal arrhythmia, finally resolved by the shock of an AED and the quick action by the medical personnel at Bengal's stadium.

Comitto cordis is a diagnosis of exclusion. That means while it looked like the correct answer almost immediately, Hamlin had to undergo a series of tests to exclude that he had any preexisting condition that could lead to his collapse. He underwent an echocardiogram and cardiac MRI to exclude valvular or structural heart disease. He underwent long-term monitoring and an electrophysiology test to exclude a possibl arrhythmia. He underwent a coronary CTA or coronary angiogram to exclude coronary atherosclerosis or a congenital coronary anomaly. Only then could the obvious diagnosis be proven true.

Hamlin passed the tests delivered by his medical team with flying colors. He was cleared to rejoin the Bills and the NFL by his local doctor and two other expert sports cardiologists. He expressed his desire to restart his NFL career as well. That was a shared decision by Hamlin and his medial team. He knows the risk of another collapse is not zero but is very, very, very rare just like it was before that Monday night game. The perfect blow, in the perfect place, at the perfect time to almost kill Damarr Hamlin in front of the eyes of the entire country. The AED present on site, and the rapid skill of the medical responders were the difference between tragedy and triumph over death that Monday night..



# CARDIAC EVALUATION OF AN ATHLETE

Most conditions that affect young athletes are minor and related to heat or fluid intake. Detecting the life threatening cardiac issue is the assessment goal.

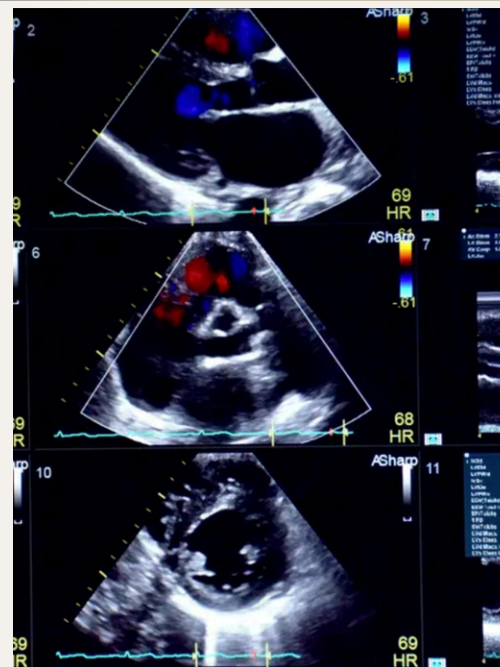
Thousands of young athletes receive preparticipation evaluations each year in the United States. One objective of these evaluations is to detect underlying cardiovascular abnormalities that may predispose an athlete to sudden death. The leading cardiovascular causes of sudden death in young athletes include hypertrophic cardiomyopathy, congenital coronary artery anomalies, repolarization abnormalities, and Marfan syndrome. Because these abnormalities are rare and difficult to detect clinically, it is recommended that team physicians use standardized history questions and examination techniques. Athletes, accompanied by their parents, if possible, should be asked about family history of cardiac disease and sudden death; personal cardiac history; and exercise-related symptoms, specifically syncope, pre-syncope, chest pain, and palpitations. The physical examination should include blood pressure measurement, palpation of radial and femoral pulses, dynamic cardiac auscultation, and evaluation for Marfan syndrome. Athletes with “red flag” signs or symptoms may need activity restriction and referral for sports cardiac specialist evaluation.





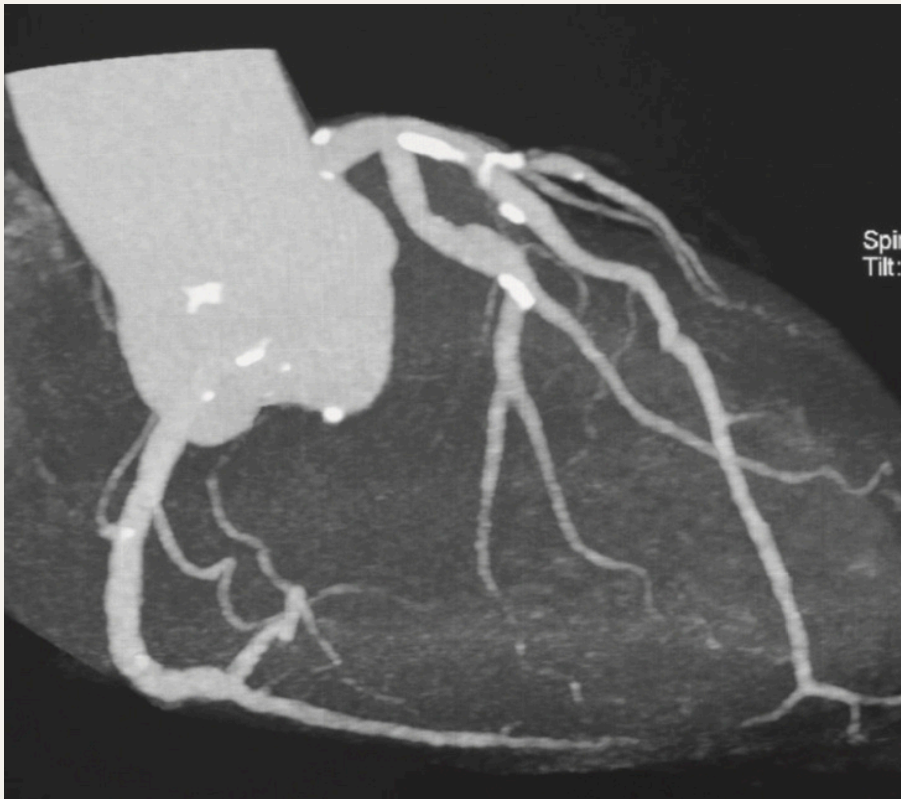
### Cardiovascular Screening Questions for the Athletic Preparticipation Examination

- Have you ever passed out or nearly passed out during or after exercise?
- Have you ever had discomfort, pain, or pressure in your chest during exercise?
- Does your heart race or skip beats during exercise?
- Has a doctor ever told you that you have high blood pressure, high cholesterol, a heart murmur, or a heart infection?
- Has a doctor ever ordered a test for your heart (e.g., electrocardiography, echocardiography)?
- Has anyone in your family died for no apparent reason?
- Does anyone in your family have a heart problem?



An Echocardiogram reveals information about cardiac structure, valvular structure and overall cardiac function.

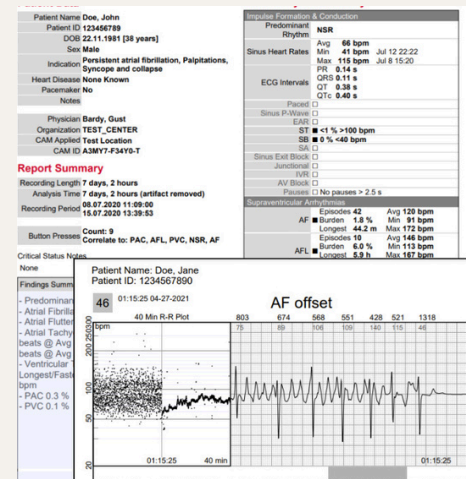
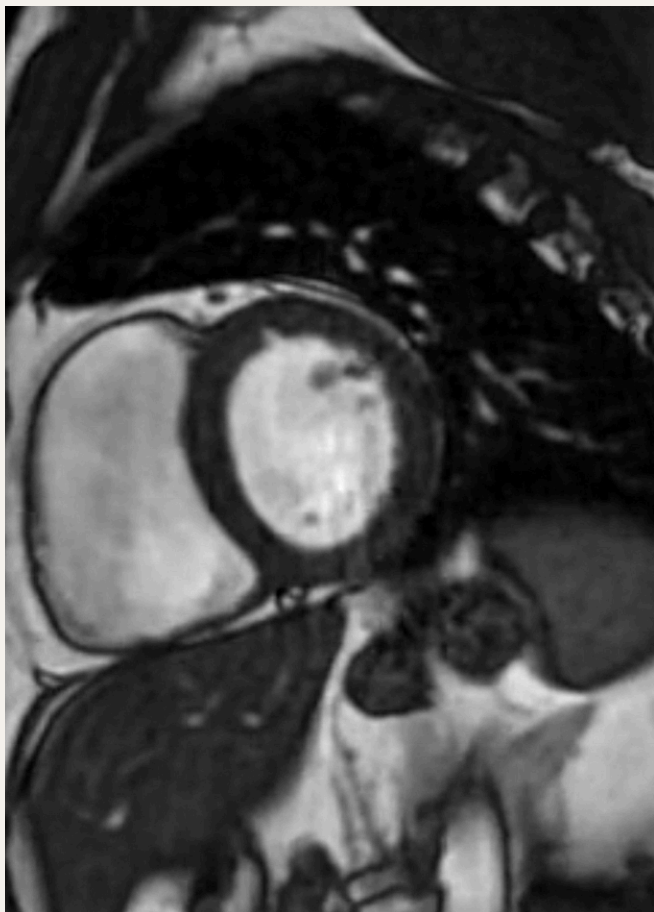




Coronary CTA (Left) or coronary angiography can exclude congenital coronary anomalies that can lead to sudden death.

Cardiac MRI (Lower Left) can detect cardiac structural anomalies, evaluate cardiac function,, and detect inflammation.

Cardiac monitor analysis (Upper Lower Right) and Electrophysiology Testing (Lower Right) can detect and treat potentially life threatening arrhythmias.



# SHARED DECISION MAKING: IS PLAYING SPORTS OPTIONAL OR LIKE OXYGEN?

The decision to allow an athlete to return to play after experiencing a cardiac event is no longer solely determined by the team or the doctor. Participation in sports for athletes with heart conditions is a complex issue. Making a simple yes or no decision is usually not the best approach for our young athletes.

Athletes who have been diagnosed with heart conditions in the past have struggled with having their futures taken away from them in an instant. Disqualifying them from sports can have a significant negative impact on their lives. Many stories exist of kids who did not cope well and became suicidal. Disqualified athletes have been seen to experience a decline in their academic performance and mental health, turning to depression, alcohol, and drug use when the stabilizing influence of athletics is removed from their lives. It's important to understand the significance of sports in the life of the patient. For some, it is not just an optional activity but something they feel they must have in their lives. It is more critical like oxygen to them.

There are five important aspects that guide sports cardiologists and help them in the shared decision-making process. The first is knowledge: understanding the appropriate diagnosis and being an expert in the condition. Humility is also crucial, as it involves recognizing when to seek help from other experts and being open to the possibility of changing scientific knowledge. Respect for the patient's priorities and voice is another key aspect. Teamwork is essential, treating the patient as a teammate and involving significant others in the decision-making process. Lastly, communication is vital, involving the patient, parents, and school in the discussion.

All of these five pillars—knowledge, humility, respect, teamwork, and communication—need to be considered when making decisions about the care of athletes.

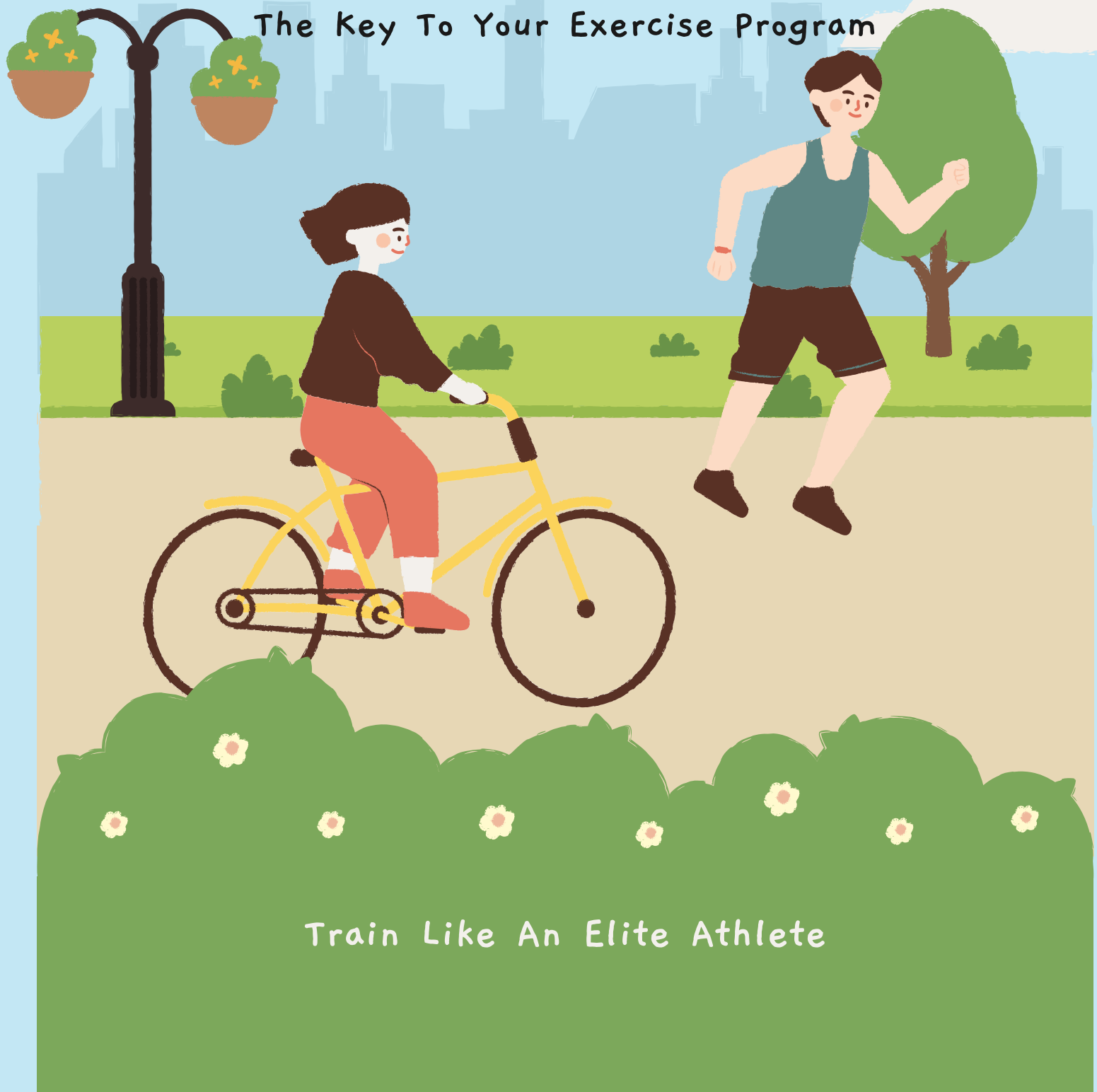


**Bronny James**



# ZONE TRAINING

The Key To Your Exercise Program



Train Like An Elite Athlete

# SETTING YOUR TRAINING ZONE

To grasp the concept of Zone 2 cardio, it is essential to understand how your body utilizes the food you consume to sustain itself.

Cardiopulmonary Exercise Testing (CPET) enables precise measurement of oxygen consumption and carbon dioxide production levels during physical activity. This testing method helps determine the heart rate at which you transition into an anaerobic state and allows very accurate setting of training zone heart rates.

- Every cell in your body relies on adenosine triphosphate (ATP) for energy. Whether you are walking, deadlifting, or reading this article, ATP is at work.
- ATP production occurs in three main ways:
  - Oxygen-dependent metabolism primarily uses fatty acids (oxidation) to create the majority of the ATP you need daily. This process takes place within the mitochondria of your cells and is crucial for Zone 2 cardio.
  - Non-oxygen-dependent glucose metabolism (glycolysis), utilized during intense activities like sprinting or weightlifting, where glycogen/carbs are burned to replenish ATP stores in the cytosol of your cells.
  - Recycling of stored ATP, where ADP is converted back to ATP with the help of creatine for energy renewal.

Additionally, ATP can be obtained from lactate by converting it into glucose for glycolysis.





# ZONE 2

## TRAINING



### LOW INTENSITY FAT BURN

In Zone 2, your exercise intensity is at a level in which you are stimulating your cells' mitochondrial function the most. You can meet your body's demand for ATP using only fat and oxygen in your mitochondria. If you were to go a bit harder, your body would start using more carbs in your cells' cytosol to create ATP through the process of glycolysis and produce lactic acid or lactate.

### FINDING YOUR ZONE 2

Zone 2 can be determined by employing diverse heart rate formulas that consider factors such as age, fitness levels, and certain assumptions. However, the most precise approach to ascertain your Zone 2 involves cardiopulmonary fitness testing. This method utilizes oxygen consumption and carbon dioxide production to establish your aerobic threshold (AT). Alternatively, measuring lactate levels can also aid in identifying the onset of anaerobic metabolism.

### ZONE 2 BENEFITS

Increased number and efficiency of mitochondria in your body

Improved performance as an endurance athlete

Improved cardiovascular health

Improved work capacity

Prevents injury and aids recovery

Boosts mood

# CARDIO ZONE TRAINING

## Target Training Zones



Aerobic  
Threshold  
(AT)

	Heart Rate Percentage	Rate of Perceived Exertion	Fuel	Effort
<b>ZONE 1</b>	50-60% of Max HR	"Very Light" 2-3 out of 10	Fat	Warm Up, "Just getting started" Easy pace
<b>ZONE 2</b>	60-70% of Max HR	"Light" 4-5 out of 10	Fat	High Cardiovascular Benefit Zone, Conversational pace
<b>ZONE 3</b>	70-80% of Max HR	"Moderate" 6-7 out of 10	Fat To Glucose	Endurance, Harder to Speak, Winded
<b>ZONE 4</b>	80-90% of Max HR	"Hard" 8-9 out of 10	Glucose	Sprint, High Intensity Exercise
<b>ZONE 5</b>	90-100% of Max HR	"Very Hard" 9-10 out of 10	Glucose	All Out Sprint

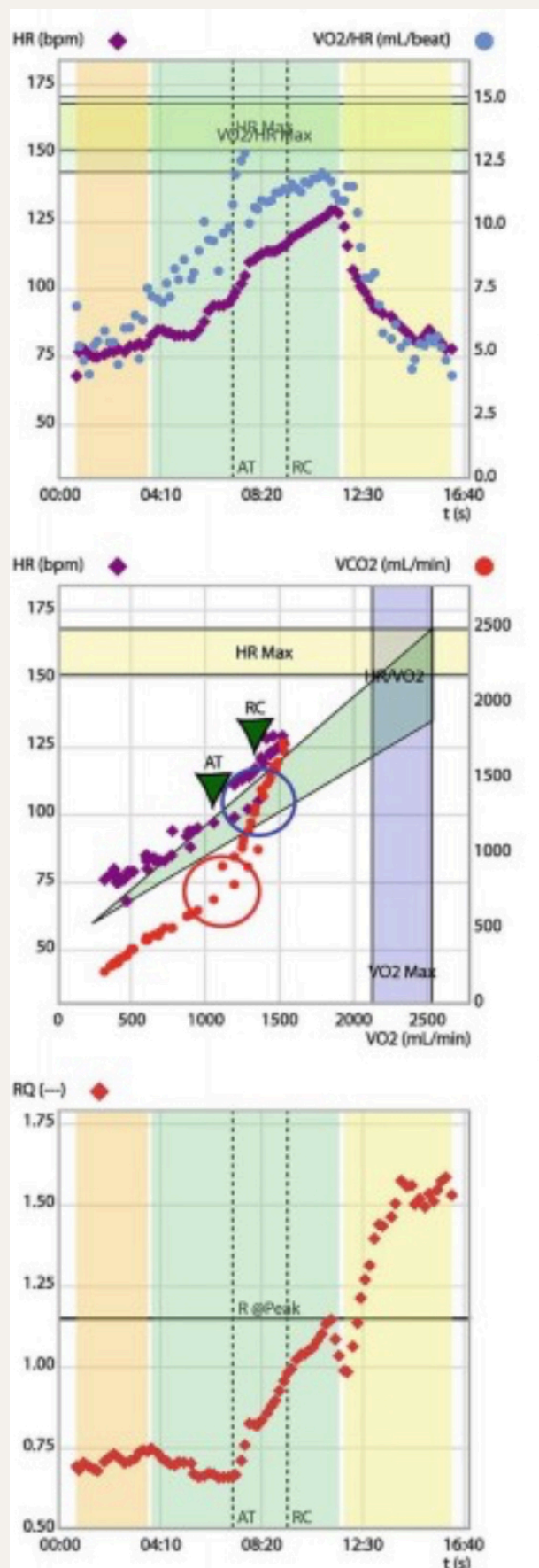


Arkansas  
Cardiology  
Exercise Lab

[Arkansas Cardiology Exercise and Sports Cardiology Clinic](#)







Cardiopulmonary stress testing (CPET) is effective in identifying your aerobic threshold (AT) and establishing your zone 2 heart rate zone.



For athletes, dedicating more time to Zone 2 training can enhance endurance and speed. Elite athletes have long relied on Zone 2 cardio. Professional runners typically allocate around 80% of their training time to Zone 2, setting them apart from amateur athletes who often train in zones 3 and 4. Despite feeling less intense, Zone 2 training helps improve overall performance by enabling athletes to increase speed and distance while maintaining a low heart rate. This type of training enhances the body's fat-burning capacity, allowing for sustained pace improvements without relying on carbohydrates. The utilization of fat as fuel provides an extended energy source, enabling athletes to sustain higher speeds for longer durations.

Exercising your mitochondria through Zone 2 cardio benefits your heart and circulatory system. This type of cardio strengthens your heart, making it more efficient by requiring fewer pumps to circulate blood. Additionally, your body enhances its vascular system, improving the delivery of oxygenated blood. These cardiovascular enhancements improve exercise performance and reduce resting heart rate.

Zone 2 cardio also enhances work capacity, which is beneficial even for strength athletes. It aids in quicker recovery between lifting sets, allowing for increased productivity during training sessions.

Moreover, Zone 2 cardio plays a role in injury prevention and recovery. This exercise places minimal stress on the body, enabling you to incorporate more volume into your training regimen without risking injury or exhaustion. Even after a lengthy Zone 2 cardio session, you'll be prepared for another session the following day.

Call us for your cardiopulmonary fitness test and start training like an elite athlete!



# BODY FUEL

## HEALTHY DIET HABITS FOR PERFORMANCE

Sports nutrition is a vital component of an athlete's performance and overall well-being.





## How Do I Follow a Healthy Diet Pattern?

The American Heart Association recommends a healthy eating pattern that emphasizes vegetables, fruits and whole grains. It includes skinless poultry, fish and legumes (beans, peas and lentils); nontropical vegetable oils; and nuts and seeds. Limit your intake of sodium, sweets, sugar-sweetened beverages and red and processed meats. Everything you eat and drink is part of your diet pattern. Make healthy choices today and they'll add up to healthier tomorrows for you!



### Vegetables

- Eat a variety of colors and types, especially deeply colored vegetables, such as spinach, carrots and broccoli.
- All vegetables count, including fresh, frozen, canned or dried. Look for vegetables canned in water. For frozen vegetables, choose those without high-calorie sauces or added sodium or sugars.
- Examples of a portion per serving are: 2 cups raw leafy greens; 1 cup cut-up raw or cooked vegetables (about the size of a fist); or 1 cup 100% vegetable juice (no salt added).

### Fruits

- Unsweetened fruits are best. Eat a variety of colors and types, especially deeply colored fruits, such as peaches and berries.
- Eat whole fruits to get all the nutrients (such as dietary fiber) that can be missing in some juices.
- Examples of a portion per serving are: 1 medium fruit (about the size of a baseball); ¼ cup unsweetened dried fruit; ½ cup fresh, frozen or canned fruit (unsweetened frozen or canned in its own juice or water); or ½ cup 100% fruit juice.
- For beverages, look for 100% fruit juice. Avoid sugar-sweetened beverages. They're high in calories and low in nutrients.

### Whole grains

- At least half of your servings should be high-fiber whole grains. Select items like whole-wheat bread, whole-grain crackers and brown rice. Look at the ingredients list to see that the first ingredient is a whole grain.
- Aim for about 25 grams of fiber from foods each day. Check the Nutrition Facts label for dietary fiber content.
- Examples of a portion per serving are: 1 slice bread; ½ cup hot cereal; 1 cup cereal flakes; or ½ cup cooked rice or pasta (about the size of a baseball).

### Protein foods

- Mix up your protein sources. Beyond fish, poultry and lean or extra-lean meats, try eggs and soy products, such as tofu.
- Eat at least 8 ounces of non-fried fish (particularly fatty fish) each week. Fatty fish, such as salmon, mackerel, herring, lake trout, sardines and albacore tuna, are high in omega-3 fatty acids.
- Remove skin from poultry before eating.
- Trim all visible fat from meats before cooking.
- Limit processed red meats, such as bacon, salami, ham, hot dogs and sausage.
- Examples of a portion per serving are: 2 egg whites; ¾ cup cooked, flaked fish; or half a chicken breast. A 3-ounce portion is about the size of a deck of playing cards.

(continued)

### Nuts, seeds and legumes

- Add many different types of beans (black, kidney, pinto, cannellini and navy, for examples) to your soups, salads and pasta dishes.
- Try sprinkling unsalted, dry-roasted nuts over your salads. Use nuts in stir-fries. Stir them into yogurt.
- Examples of a portion per serving are: ½ ounce unsalted nuts; ½ ounce unsalted seeds; ½ cup cooked legumes (beans, peas, chickpeas or lentils); or 1 tablespoon low-sodium or no-salt-added peanut butter.

### Low-fat or fat-free dairy products

- Use low-fat (1%) and fat-free milk. 2% milk is not low fat.
- Choose low-fat or fat-free yogurt with no added sugars.
- Choose low-fat or fat-free cottage cheese. Look for the lowest sodium product you can find.
- Cheeses (low-fat or fat-free) should have no more than 3 grams of fat per ounce and no more than 2 grams of saturated fat per ounce.
- Examples of a portion per serving are: 1 cup milk or yogurt or 1½ ounces fat-free or low-fat cheese (about the size of 3 stacked dice).



## HOW CAN I LEARN MORE?

- 1 Call 1-800-AHA-USA1 (1-800-242-8721), or visit [heart.org](https://heart.org) to learn more about heart disease and stroke.
- 2 Sign up to get *Heart Insight*, a free e-newsletter for heart patients and their families, at [HeartInsight.org](https://HeartInsight.org).
- 3 Connect with others sharing similar journeys with heart disease and stroke by joining our Support Network at [heart.org/SupportNetwork](https://heart.org/SupportNetwork).

### Do you have questions for your doctor or nurse?

Take a few minutes to write down your questions for the next time you see your health care provider.

For example:

**How many calories should I eat each day?**

**What's a good cookbook with healthy recipes?**

### MY QUESTIONS:

We have many other fact sheets to help you make healthier choices to reduce your risk, manage disease or care for a loved one. Visit [heart.org/AnswersByHeart](https://heart.org/AnswersByHeart) to learn more.



# How Can I Cook Healthfully?

A healthful eating plan means more than just choosing the right foods to eat. It's important to prepare foods in a healthy way. Some ways of cooking are better than others for cutting saturated fat, trans fat, sodium, added sugars and calories. At the same time, you want to maximize your nutritional benefits.

You don't have to give up taste or the main and side dishes you love. Just learn some heart-healthy cooking skills and you can have it all (almost)!



Stir-frying can be a healthy and delicious way to cook! The high temperature cooks the food fast. Stirring the food constantly keeps it from sticking and burning. For vegetables, poultry or seafood, use a nontropical liquid vegetable oil in your stir-fry pan or wok.

## What are good ways to cook?

- **Roast** — in the oven with a rack so the meat or poultry doesn't sit in fat drippings. Set at 350 degrees to avoid searing. Baste with liquids like fat-free, low-sodium beef, chicken or vegetable broth, low-sodium tomato juice or fresh lemon juice. Roasting is also a delicious way to prepare seasonal vegetables.
- **Bake** — in the oven in covered or uncovered cookware. When you bake, food cooks slowly with gentle heat. The food's moisture evaporates slowly, enhancing flavor.
- **Braise or Stew** — on top of the stove or in the oven with a little bit of liquid (water or broth). After cooking, you can refrigerate the food. Before reheating, skim off any fat that has become solid on the top.
- **Poach** — by immersing foods, such as skinless chicken, fish or eggs, in simmering liquid.
- **Grill or Broil** — on a rack with high heat.

- **Sauté** — in a skillet or frying pan over direct heat. Use cooking spray or a small amount of canola oil.
- **Stir-fry** — in a wok or stir-fry pan over high heat with a small amount of a nontropical vegetable oil.
- **Microwave** — heat food quickly in a microwaveable dish.
- **Steam** — in a wire basket over simmering water. Steaming can work better than boiling to help some foods keep their shape and texture.

## How can I cut saturated fat, sodium and calories without losing taste?

- Add lots of fruits, vegetables and whole grains to your meals. Make half your plate fruits and vegetables. More color equals more nutrients. Make half the grains you eat whole grains. Check the ingredients list and select products with a whole-grain ingredient listed first.
- Include different lean protein foods in your diet. Along with meats, poultry and seafood, dried

(continued)



beans or peas, eggs, soy, nuts and seeds are also in the lean protein group.

- Select lean and extra-lean cuts of meat and trim off any visible fat before cooking. After browning, transfer ground meat to a colander to drain off excess fat. Remove poultry skin before or after cooking (always before serving).
- Choose canned tuna, salmon or sardines packed in water with no added salt or look for brands with the lowest sodium.
- Don't overcook vegetables. Steam or bake them instead of boiling so they keep more of their natural flavor and texture.
- Compare Nutrition Facts labels to find a tasty salad dressing that's lower in calories, saturated fat, sodium and added sugars.
- Use fresh and dried herbs and spices to add flavor to foods.



Instead of boiling vegetables, steam or bake them to keep more of their natural flavor and texture.

## HOW CAN I LEARN MORE?

- 1 Call 1-800-AHA-USA1 (1-800-242-8721), or visit [heart.org](https://heart.org) to learn more about heart disease and stroke.
- 2 Sign up to get **Heart Insight**, a free e-newsletter for heart patients and their families, at [HeartInsight.org](https://HeartInsight.org).
- 3 Connect with others sharing similar journeys with heart disease and stroke by joining our Support Network at [heart.org/SupportNetwork](https://heart.org/SupportNetwork).

### Do you have questions for your doctor or nurse?

Take a few minutes to write down your questions for the next time you see your health care provider.

For example:

**What about desserts?**

**What's a good cookbook with healthy recipes?**

### MY QUESTIONS:

We have many other fact sheets to help you make healthier choices to reduce your risk, manage disease or care for a loved one. Visit [heart.org/AnswersByHeart](https://heart.org/AnswersByHeart) to learn more.



# Healthy Recipes

From the Baptist Health  
Cardiac Cookbook



# Roasted Cauliflower



6 Servings



20 minutes

Not a big veggie fan? Try roasting your vegetables. Roasting vegetables is one of the easiest and tastiest ways to prepare them.



## INGREDIENTS

Non-fat Cooking spray

1 Large cauliflower head, cut into small florets

2 tbsp olive oil

1/4 tsp black pepper

1/4 tsp salt (optional) OR salt-free seasoning (like Mrs Dash)

## DIRECTIONS

1. Begin by preheating the oven to 425 degrees F and spraying a baking sheet with cooking spray.
2. Combine cauliflower, olive oil, black pepper, and salt in a small bowl. Then, spread the mixture onto the prepared baking sheet.
3. Bake for 15-20 minutes, or until the cauliflower edges are lightly browned and tender.

## QUICK TIPS

### Heart-Healthy Cooking Tips:

- This recipe is heart-healthy with only 40mg of sodium per 1/2 cup serving.
- For a variation, swap cauliflower with other vegetables like baby carrots, broccoli, okra, Brussels sprouts, diced turnips, asparagus, or diced butternut squash.

**Pro tip:** Preheat the oven with an empty baking sheet inside (without using cooking spray or oil). Once heated, add seasoned veggies tossed in olive oil to the hot pan, listen for the sizzle, then return it to the oven for cooking.



# BAKED CHICKEN STRIPS WITH MICROWAVE GREEN BEANS

 4 Servings  28 minutes



## INGREDIENTS

1 lb boneless, skinless, visible fat removed chicken breasts cut into 1 " strips (or chicken tenderloins)  
1/3 cup whole-wheat flour (or all-purpose flour)  
1/2 tsp paprika  
1/3 cup skim milk  
2 Tbsp low-fat, low-sodium grated Parmesan cheese  
1/3 cup quick-cooking oats  
1 tsp garlic or onion powder  
1 lb fresh green beans (washed, stems discarded)  
1/2 cup water  
1 tsp minced garlic  
1/4 tsp black pepper

## QUICK TIPS

**Tip:** If you run out of shallow dishes, try using resealable plastic bags.

**Tip:** Don't have a dish with a lid? No problem, just use a plate to cover a casserole dish or glass loaf pan.

## DIRECTIONS

1. Preheat oven to 375 degrees F.
2. Spray a baking sheet with cooking spray
3. On a plate or shallow dish, combine pepper and flour
4. Pour milk into a second shallow dish
5. In another shallow dish, combine Parmesan cheese, oats, garlic/onion powder, and paprika/parsley (optional: pulse oat mixture in food processor for 20 seconds for a finer breading)
6. One at a time, dip chicken strips into flour and turn to coat. Then dip in milk, and then oat mixture, turning until well coated.
7. Place coated strips on prepared backing sheet
8. Once all strips are on the baking sheet give a light spray with cooking spray
9. Bake for 20 minutes until golden-brown and cooked through. (Optional: if you prefer darker brown crispy tenders, turn on the oven's broiler for the last 2 minutes but keep an eye on the tenders so they don't burn.)
10. To prepare beans: In a 2 quart microwave-safe dish, place beans, water, garlic and pepper.
11. Cover and microwave on high until beans are crisp-tender (6-8 minutes)
12. Drain excess liquid



# CRUNCHY BAKED CATFISH WITH SLAW



4 Servings



30 minutes



## INGREDIENTS

1 lb Catfish fillets  
1 large egg  
1 Tbsp water  
1/2 cup panko or unseasoned breadcrumbs  
1/4 tsp salt (divided)  
1/2 tsp ground black pepper  
1 lb bean sprouts (about 4 cups) rinsed, (or substitute shredded cabbage)  
1 lemon or lime (cut into 6 wedges)  
1 clove garlic (finely chopped)  
1 green onion (cut into 2 inch pieces, then cut each piece lengthwise 2 times)  
1 Tbsp peanut oil, canola oil, or corn oil  
1 red or green bell pepper (cut lengthwise into quarter-inch strips lengthwise)  
2 Tbsp rice vinegar or white wine vinegar

## DIRECTIONS

For Fish:

1. Preheat oven to 350 degrees F
2. Break the egg into a shallow bowl and beat with a fork, adding the water after a couple of minutes, until it is evenly yellow.
3. Mix the panko and 1/2 the salt and pepper
4. Line a baking sheet with aluminum foil for placing the breaded fish fillets
5. One at a time, dip the fillets into the egg, letting the excess egg drip off the back into the bowl.
6. Then dip each fillet into the panko and press firmly so the crumbs stick. Turn them over and do the other side.
7. Shake off any extra panko and place on the baking sheet
8. Discard any leftover egg or panko
9. When the oven is ready, bake for 8-10 minutes, then turn carefully with a spatula and bake for another 5 minutes until a corner flakes off easily with a fork.
10. Remove the fish fillets from the oven with a spatula and garnish with lime or lemon wedges

For Slaw:

1. Place the bean sprouts (or cabbage), bell pepper, and green onion in a bowl.
2. In a small jar, add the rice vinegar, peanut oil, garlic, and other half of the salt and pepper and shake to mix well.
3. Pour this mixture over the bean sprouts
4. Serve the fish with the slaw.

**Cooking Tip:** If you don't have bean sprouts, you can use finely sliced green and/or red cabbage. This will stay fresh and crunchy in the refrigerator for a couple of days

You can use any firm white fish such as tilapia.

You can spice up the salad by adding some dried chili flakes. You can also add 2 Tablespoons of toasted, unsalted chopped peanuts or almonds for extra crunch.

# Lemon-Garlic Salmon Foil Pack with Green Beans and New Potatoes



4 Servings



40 minutes



## INGREDIENTS

- 1 lb new potatoes (halved, thinly sliced)
- 2 teaspoons garlic (minced)
- 1 lb green beans (ends trimmed)
- 2 Tbsp canola oil
- 1.4 teaspoon salt
- 1/4 teaspoon black pepper
- 4 skinless salmon filets
- 1 to 2 lemons, sliced into wheels

## QUICK TIPS

**Cooking Tip:** If you can't find new potatoes, peel and thinly slice Russet potatoes. Cook in the microwave until almost tender before adding to the foil packet. They will require a longer cooking time due to being larger and denser.

**Keep it Healthy:** Remember that wild salmon not only has less calories than farm-raised salmon but also has almost half the amount of saturated fat.

**Tip:** If the green beans are extra-long, halve so they fit neatly into the foil package.

## DIRECTIONS

1. Preheat oven to 400 degrees F. Make 4 sheets of aluminum foil about 30 inches long. Fold the foil in half widthwise (into almost a square) so it's extra sturdy..
2. Cut each potato into half lengthwise. Thinly cut each half into 1/8-inch slices and place into a heatproof container. Stir in the minced garlic, cover, and cook the potatoes in the microwave until halfway tender around 90 seconds to 3 minutes depending on microwaves power. Transfer mixture to a bowl, along with the green beans, oil, salt, and pepper. Mix to combine.
3. Divide potato mixture into 4 equal portions in the center of each foil square. Nudge green beans to face the same direction. Sprinkle garlic powder onto each salmon piece and top with 2 lemon wheels.
4. Securely seal the top and sides of each foil packet. Place each foil packet onto a large baking sheet and bake into the preheated oven. Cook until salmon is cooked through, about 20 minutes.
5. Remove from oven and place each foil packet onto a plate. Carefully open each packet to serve.



# SPICY OVEN-FRIED CHICKEN



4 Servings



45 minutes



## INGREDIENTS

Non-fat Cooking spray  
1/4 cup low-fat buttermilk  
1/4 cup cornflakes crumbs  
1/4 cup yellow cornmeal  
2 Tbsp all-purpose flour  
1 tsp salt-free extra spicy seasoning  
blend such as Mrs Dash Extra Spicy  
1 tsp garlic powder  
1/2 tsp paprika  
1/4 tsp cayenne  
1/4 tsp salt  
1/8 tsp dry mustard  
4 boneless, skinless chicken breast  
halves, (about 4 ounces each), all  
visible fat discarded

## DIRECTIONS

1. Preheat the oven to 375
2. Lightly spray an 8 or 9-inch square baking pan or a baking sheet with cooking spray
3. Pour the buttermilk into a pie pan or shallow bowl
4. In a shallow dish, stir together the remaining ingredients except the chicken
5. Set the pie pan, dish, and baking pan in a row, assembly-line fashion. Dip the chicken in the buttermilk, and then in the cornflake mixture, turning to coat at each step and gently shaking off an excess. Using your fingertips, gently press the coating so it adheres to the the chicken. Place in the baking pan.
6. Lightly spray the chicken with cooking spray
7. Bake for 30 minutes or until the chicken is no longer pink in the center and the coating is crisp.

## QUICK TIP

**Tip:** Serving size 3 ounces of chicken

# TURKEY CHILI



6 Servings



20 minutes



## INGREDIENTS

Non-fat Cooking spray (optional)  
1 1/2 Tbsp canola or corn oil  
1 medium or large onion, chopped  
20 oz ground, skinless turkey breast  
2 large garlic cloves (minced) or 1/2 tsp garlic powder  
2 tsp chili powder  
1/2 tsp pepper  
1/2 tsp ground cumin  
15.5 oz canned, no-salt-added pinto beans (rinsed, drained)  
15.5 oz canned, no-salt-added black beans (rinsed, drained)  
14.5 oz canned, no-salt-added diced tomatoes (undrained)  
1 3/4 cups fat-free, low-sodium chicken broth  
1 cup frozen whole kernel corn  
6 oz canned, no-salt-added tomato paste  
4 medium green onions (green part only), sliced.

## DIRECTIONS

1. Lightly spray a Dutch oven with cooking spray. Add the oil and heat over medium-high heat, swirling to coat the bottom. Cook the onion for 3 minutes or until soft, stirring occasionally.
2. Reduce the heat to medium. Stir in the turkey. Cook for 5 minutes, or until browned, stirring frequently to turn and break up the turkey.
3. Stir in the garlic, chili powder, pepper, and cumin. Stir in the remaining ingredients except the green onions. Cook for 5 to 7 minutes, or until heated through, stirring frequently.
4. Just before serving, sprinkle with the green onions.

## QUICK TIPS

**Tip:** Serving Size 1 1/3 cups

**Cooking Tip:** This recipe can be made in slow-cooker (such as Crock Pot) or pressure-cooker (such as Insta-Pot). Allow for longer cooking time for slow-cooker meals.



# BAPTIST HEALTH HEART INSTITUTE ARKANSAS CARDIOLOGY

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