

Firelands Regional Medical Center School of Nursing  
AMSN 2023  
Comprehensive Simulation: STEMI scenario  
Madison Proy

**Patient: Nicky Heartbreaker DOB: 1/1/59**

- Nicky is a 64-year old male who developed diaphoresis and mid-sternal chest pain at 10/10 this morning while at work. He drove himself to the local Emergency Department.
- Past medical history: HTN, Hyperlipidemia, DM Type II, Smokes 1 ppd; Noncompliance; Family History CAD; Erectile dysfunction.
- Social history: Divorced, 2 adult children, 3 grandchildren, rents apartment, factory laborer
- **Home medications:** (patient has not refilled the first three medications and has not taken since beginning of April)
  - Atorvastatin 20 mg po QHS
  - Metformin 500 mg PO BID
  - Enalapril 10 mg PO BID
  - Sildenafil 25 mg PO Daily PRN
- Weight: 90kg
- Allergies: Contrast Dye

**Emergency Department**

- Vital Signs: T- 98<sup>0</sup> F (oral); HR-55; RR-18; BP 80/60; SpO2-92%. Weight: 90kg
- A 12-Lead ECG was done which showed ST elevation in Leads II, III, and aVF. He was started on O2 2L per NC, and 2- 18-gauge IV's were started. Fast patches placed.

**Diagnosis: Inferior STEMI**

- He was given the following: four- ASA 81 mg tablets (chewed), three- 0.4 mg SL NTG (has not taken Sildenafil within last 24 hours), Brilinta loading dose (180 mg), Morphine Sulfate 4 mg IV, a Heparin bolus and started on a drip per protocol, and an IV bolus of 2,000 mL of NS.
- The time between his arrival to the Emergency Department and arrival to the Cardiac Cath Lab was 30 minutes.

## **Cardiac Catheterization Lab**

- Procedure: Left Heart Catheterization with PTCA to: **RCA**  
Right radial: **TR band**
- 2 drug eluting stents
- Medications:
  - Versed 2 mg IV
  - Fentanyl 50 mcg IV
  - Bivalirudin (Angiomax): Supply 250 mg in 50 mL NS
    - Bolus:  $0.75 \text{ mg/kg} (90 \text{ kg} \times 0.75 \text{ mg} = 67.5 \text{ mg}/250 \text{ mg} \times 50 = 13.5 \text{ mL})$
    - Drip:  $1.75 \text{ mg/kg/hr} (90 \times 1.75 = 157.5 \text{ mg/hr}/250 \text{ mg} \times 50 = 31.5 \text{ mL/hr})$
  - Verapamil 5 mg IV
  - Diphenhydramine 50 mg IV
  - Solumedrol 125 mg IV
  - Famotidine 20 mg IV
- TRB band placed
- Stent card placed in chart

## **4C**

- He has just arrived to 4C from the Cath Lab.
- Vital signs: T- 98.9<sup>O</sup> F (oral); BP 108/56; HR- 118; RR- 24; SpO2- 91% on 2L NC
- You performed a 12-Lead ECG with the following findings: **Atrial Fibrillation**
- Present condition: Chest pain free currently; complaint of fatigue & dyspnea; crackles present; low back pain 3/10; EF 35%
- Ecchymosis at right radial site; TR Band in place
- Medications: All but the IV fluid are medications the patient will also be prescribed at discharge
  - ASA 81 mg PO Daily
  - Brilinta 90 mg PO BID
  - Atorvastatin 40 mg PO QHS
  - Metformin 500 mg PO BID- Hold for 48 hours
  - Enalapril 10 mg PO BID
  - Acetaminophen 500 mg PO Q 4-6 hours PRN non-cardiac pain
  - D5 0.45 NS at 80 mL/hr- slowed this due to probable HF and fluid overload

**1-hour post simulation assignment and survey: due April 24, 2023 at 1600**

Discharge Education: A copy of this document is on Edvance360 under Simulation Resources- use this electronic version to complete and submit the assignment.

Firelands Regional Medical Center School of Nursing  
 AMSN 2023: Comprehensive Simulation  
**Discharge Education** (1H-Sim)



**Directions:** For **each** education topic, include specific information you would provide to Nicky Heartbreaker at discharge. The information must be specific to the patient, scenario, social determinants of health concerns, and be thorough and detailed (this will not be a brief list). Include handouts, video links, pictures, etc. that you could present for **at least 4** of the education topics. This assignment is due in the Comprehensive Simulation dropbox on Edvance360 at **1600 on April 24, 2023 (along with the simulation survey)**. If the assignment is late or not completed in full it will result in 1-hour missed simulation time, and will have to be completed prior to beginning the final exam on 4/28/2023 at 0800.

Topic	Education
<b>Diagnosis</b>	STEMI 1) What is a STEMI: a) ST elevated myocardial infarction (heart attack). b) Oxygenated blood flow to cardiac muscle is reduced or completely blocked. In this case, you experienced a STEMI meaning there was complete occlusion. c) Vessels that supply the heart are narrowed by fat/cholesterol leading to plaque buildup and the potential of blood clots forming leading to blockage. d) Damage or death of heart muscle due to this lack of oxygenated blood supply is referred to as ischemia. e) When ischemia occurs, it is called a myocardial infarction or hear attack. 2) What Can Cause a STEMI: a) Modifiable risk factors i) Poor diet ii) High blood pressure iii) Diabetes iv) Smoking v) Physical inactivity vi) Obesity vii) Stress b) Non-Modifiable risk factors i) Increasing age ii) Family history/genetics iii) Gender (male) iv) Ethnicity (African American) 3) Ways to Prevent Future Myocardial Infarctions: a) Remain compliant with prescribed medications.

- b) Maintain a heart-healthy diet.
  - i) Decrease saturated fats and cholesterol.
  - ii) Increase complex carbohydrates and fiber (grain, fruits, vegetables).
  - iii) Decrease red meats, egg yolks, and whole milk.
  - iv) Increase omega-3 fatty acids (salmon and tuna).
- c) Take part in a cardiac rehabilitation program/increase physical activity.
  - a) Moderate activity for at least 30 minutes most days of the week.
- d) Smoking cessation
- e) Attend follow-up appointments.

**Heart Failure (educational photo below)**

- 1) What is Heart Failure?
  - a) An abnormal clinical syndrome involving inadequate cardiac pumping and/or inadequate filling of the heart.
  - b) In your case you have poor pumping of the heart also known as systolic heart failure evidenced by your ejection fraction (the amount of blood being pumped out of the heart with each beat) being low at 35%.
  - c) Your symptoms of crackles in the lungs, fatigue dyspnea, and shortness of breath is consistent with left sided heart failure meaning the left side of your heart is struggling to pump effectively and in turn blood flow is being backed up into your pulmonary system causing you these symptoms.
- 2) What can cause Heart Failure?
  - a) High blood pressure.
  - b) Coronary artery disease including myocardial infarction (STEMI).
  - c) Cardiomyopathies (thickened enlarged heart muscle).
  - d) Valvular issues.
  - e) Smoking.
- 3) What can be done to prevent worsening heart failure?
  - a) Compliance with prescribed medications.
  - b) Restrict sodium in diet.
  - c) Conserve energy (balance rest and activity).
  - d) Manage and maintain a healthy weight.
  - e) Restrict fluid as needed and told by health care provider.

**Atrial Fibrillation**

- 1) What is Atrial Fibrillation
  - a) A heart dysrhythmia caused by disorganized electrical activity in the heart causing loss of adequate contraction of the atria (the upper chambers of the heart) simply meaning your heart is struggling to pump due to disorganized electrical firing leading to poor blood flow out of the heart.
  - b) Can be acute or chronic.
- 2) What can cause Atrial Fibrillation?
  - a) Coronary artery disease and MI
  - b) Hypertension
  - c) Heart failure
  - d) Illness

	<p>3) How to prevent reoccurrence/ treat atrial fibrillation?</p> <ul style="list-style-type: none"> <li>a) Medication compliance</li> <li>b) Cardioversion</li> <li>c) Amiodarone</li> </ul>
<p><b>Medications</b></p>	<ul style="list-style-type: none"> <li>1) Aspirin 81mg <ul style="list-style-type: none"> <li>a) Works to prevent blood clots and future heart attacks by thinning the blood.</li> <li>b) Takes prescribed dose orally daily.</li> <li>c) Take with a full glass of water.</li> <li>d) Side effects include increased risk of bleeding, abdominal pain/distress, and rash.</li> </ul> </li> <li>2) Brilinta 90mg <ul style="list-style-type: none"> <li>a) Taken with aspirin to reduce the risk of future heart attacks by decreasing platelet aggregation.</li> <li>b) Reduce the risk of the stent that was placed being blocked by clots.</li> <li>c) Take as prescribed orally twice daily.</li> <li>d) Side effects include slow heart rate, bleeding, and respiratory distress.</li> <li>e) There is an increased risk for bleeding and bruising while on this drug so it is important to monitor for excessive bleeding and notify your health care provider. <ul style="list-style-type: none"> <li>i) brush your teeth with a soft bristled toothbrush.</li> <li>ii) Be aware of your surroundings and prevent falls.</li> <li>iii) Monitor stools for dark color and avoid straining with bowel movements.</li> <li>iv) Use an electric razor.</li> </ul> </li> </ul> </li> <li>3) Atorvastatin 40mg <ul style="list-style-type: none"> <li>a) Prevents future heart attacks by lowering your bad cholesterol.</li> <li>b) You should also lower cholesterol in the diet while taking.</li> <li>c) Take orally once daily at night before bed.</li> <li>d) Side effects include abdominal distress, rash, and confusion/dizziness.</li> </ul> </li> <li>4) Metformin 500mg <ul style="list-style-type: none"> <li>a) Helps manage type 2 diabetes by decreasing glucose production in your liver, decreases absorption of glucose in the intestines, and increases your body's sensitivity to insulin.</li> <li>b) You should take this orally twice daily.</li> <li>c) Helps control high blood sugar but does not cure diabetes.</li> <li>d) Side effects include abdominal distress and metallic taste.</li> </ul> </li> <li>5) Enalapril 10mg <ul style="list-style-type: none"> <li>a) Works to lower blood pressure, manage symptoms/slow progression of heart failure, and prevent remodeling of the heart.</li> <li>b) Take orally twice daily.</li> <li>c) Change positions slowly.</li> <li>d) Avoid high potassium containing foods.</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>e) Side effects include low blood pressure, protein in the urine, and cough.</li> <li>6) Acetaminophen 500mg <ul style="list-style-type: none"> <li>a) Taken to relieve mild to moderate pain.</li> <li>b) Take orally every 4-6 hours as needed.</li> <li>c) Do not exceed 4,000 milligrams (8 tablets) in a day.</li> <li>d) Side effects include harm to the liver with high doses and abdominal distress.</li> </ul> </li> </ul>
<b>Follow-up/ Compliance</b>	<ul style="list-style-type: none"> <li>1) Medication Compliance <ul style="list-style-type: none"> <li>a) Utilize a pill box with the days of the week.</li> <li>b) Set a timer on your phone.</li> <li>c) Have support from family or friends to help remind you.</li> <li>d) Talk with the case manager to find affordable ways for you to get your prescription medications.</li> <li>e) Talk with your health care provider about side effects to reduce anxiety and understand reasoning behind the medication.</li> </ul> </li> <li>2) Attendance of follow up appointments and cardiac rehabilitation. <ul style="list-style-type: none"> <li>a) Form a schedule.</li> <li>b) Purchase a calendar or use your phone calendar.</li> <li>c) Set reminders/alarms.</li> <li>d) Attending follow up appointments and rehabilitation is extremely important to prevent worsening of disease and future health concerns.</li> </ul> </li> </ul>
<b>Puncture site care</b>	<ul style="list-style-type: none"> <li>1) Monitor for bleeding at the site. <ul style="list-style-type: none"> <li>a) Hold pressure and seek medical attention if present.</li> </ul> </li> <li>2) Monitor for numbness, tingling, pain, coolness, pallor of affected hand.</li> <li>3) Monitor for infection at the site. <ul style="list-style-type: none"> <li>a) Increased temperature.</li> <li>b) Increased redness.</li> <li>c) Increased swelling.</li> </ul> </li> <li>4) Notify your health care provider if any of the above are present.</li> <li>5) Keep the area clean and dry. <ul style="list-style-type: none"> <li>a) Avoid baths, swimming, and hot tubs.</li> </ul> </li> <li>6) Clean once daily with soap and water.</li> <li>7) Do not use lotions or ointments on the site.</li> <li>8) Avoid lifting heavy objects for up to a week.</li> <li>9) It is normal for the site to be tender and possibly a little sore for up to 1 week along with some bruising.</li> </ul>
<b>Diet</b>	<ul style="list-style-type: none"> <li>1) Low sodium diet <ul style="list-style-type: none"> <li>a) Choose foods low in salt. <ul style="list-style-type: none"> <li>i) Fresh fish/meats</li> <li>ii) Eggs, milk, and yogurt</li> <li>iii) Plain rice, pasta, and oatmeal.</li> </ul> </li> <li>b) Avoid adding salt when preparing foods.</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>c) Avoid frozen and canned meals. <ul style="list-style-type: none"> <li>i) Frozen is better than canned but fresh foods are the best option.</li> </ul> </li> <li>2) Heart healthy diet (<b>educational photo below</b>) <ul style="list-style-type: none"> <li>a) Consume a diet rich in: <ul style="list-style-type: none"> <li>i) Fruits and vegetables.</li> <li>ii) Whole grains.</li> <li>iii) Low-fat dairy products.</li> <li>iv) Skinless poultry and fish.</li> <li>v) Nuts and legumes.</li> <li>vi) Non-tropical vegetable oils.</li> <li>vii) Limit alcohol consumption.</li> <li>viii) Consume enough calories to maintain a healthy weight.</li> </ul> </li> <li>b) Consume a diet low in: <ul style="list-style-type: none"> <li>i) Saturated and trans fats (butter, baked goods, fatty meats, etc.)</li> <li>ii) Sodium</li> <li>iii) Red meat</li> <li>iv) Sugary beverages</li> </ul> </li> </ul> </li> <li>3) DASH diet <ul style="list-style-type: none"> <li>a) Diet aimed at lowering blood pressure.</li> <li>b) Limits red meat, sodium, and sugary foods/beverages.</li> <li>c) Promotes healthy food options.</li> </ul> </li> </ul>
<b>Exercise/Activity</b>	<ul style="list-style-type: none"> <li>1) Physical activity <ul style="list-style-type: none"> <li>a) Moderate level activity such as walking, swimming, or biking.</li> <li>b) 30 minutes at a time.</li> <li>c) Most days of the week.</li> <li>d) Regular physical activity has been proven to improve health and quality of life.</li> <li>e) Physical activity is anything that involves you moving your body and burning calories.</li> </ul> </li> <li>2) Cardiac rehabilitation program <ul style="list-style-type: none"> <li>a) Supervised physical activity to improve the future of your cardiovascular health.</li> <li>b) Common for patients who have experienced a heart attack to regain health.</li> <li>c) Aids patients in safely beginning physical activity by being monitored.</li> <li>d) Decreases anxiety in patients following heart attack.</li> </ul> </li> </ul>
<b>Smoking cessation</b>	<ul style="list-style-type: none"> <li>1) Programs <ul style="list-style-type: none"> <li>a) Quitline: 1-800-QUIT-NOW (1-800-784-8669) or <a href="http://www.smokefree.gov">www.smokefree.gov</a></li> <li>b) Online resources <ul style="list-style-type: none"> <li>i) American Heart Association (<a href="http://www.heart.org">www.heart.org</a>)</li> <li>ii) American Cancer Society (<a href="http://www.cancer.org/healthy/stay-away-from-tobacco">www.cancer.org/healthy/stay-away-from-tobacco</a>)</li> <li>iii) American Lung Association (<a href="http://www.lung.org/stop-smoking">www.lung.org/stop-smoking</a>)</li> </ul> </li> <li>c) Many hospitals and healthcare companies have outpatient smoking cessation programs.</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>i) Behavior modification.</li> <li>ii) Nicotine replacement therapy.</li> <li>iii) Other prescription medications.</li> </ul> <p>2) Medications</p> <ul style="list-style-type: none"> <li>a) Nicotine replacement medicines <ul style="list-style-type: none"> <li>i) Gum or lozenges.</li> <li>ii) Patch.</li> <li>iii) Spray.</li> </ul> </li> <li>b) Non-nicotine prescription medicines <ul style="list-style-type: none"> <li>i) Bupropion hydrochloride.</li> <li>ii) Varenicline.</li> </ul> </li> </ul> <p>3) Helpful tips</p> <ul style="list-style-type: none"> <li>a) Delay the urge and it will pass.</li> <li>b) Distract yourself with a new hobby.</li> <li>c) Deep breath/meditate/relax/decrease stress.</li> <li>d) Drink water out of a straw.</li> <li>e) Use toothpicks.</li> </ul> <p>4) Benefits of quitting (<b>educational video below</b>)</p> <ul style="list-style-type: none"> <li>a) Increases both physical and mental health.</li> <li>b) Decreases risk of cancers and diseases associated with smoking.</li> <li>c) Improves length and quality of life.</li> </ul>
<p><b>Signs and symptoms to report/Seek medical care</b></p>	<ul style="list-style-type: none"> <li>1) Chest pain <ul style="list-style-type: none"> <li>a) Center of chest.</li> <li>b) New or worsening. <ul style="list-style-type: none"> <li>i) change in frequency, duration, or severity.</li> </ul> </li> <li>c) Not relieved by rest.</li> <li>d) Lasting longer than a few minutes (&gt;20 minutes).</li> <li>e) Pressure, squeezing, heaviness, fullness, pain.</li> </ul> </li> <li>2) Discomfort in other parts of body <ul style="list-style-type: none"> <li>a) Pain or discomfort in arms.</li> <li>b) Pain or discomfort in the back.</li> <li>c) Pain or discomfort in the neck/jaw.</li> <li>d) Pain or discomfort in the stomach.</li> </ul> </li> <li>3) Other Symptoms of Heart Attack (<b>educational photo below</b>) <ul style="list-style-type: none"> <li>a) Sweating.</li> <li>b) Shortness of breath.</li> <li>c) Nausea.</li> <li>d) Lightheadedness.</li> </ul> </li> <li>4) Symptoms of Stroke <ul style="list-style-type: none"> <li>a) Sudden numbness/weakness of face, arm, or leg.</li> <li>b) Sudden confusion.</li> <li>c) Sudden trouble speaking or understanding others.</li> <li>d) Sudden lack of coordination and eyesight.</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>5) Symptoms of Atrial Fibrillation <ul style="list-style-type: none"> <li>a) Palpitations (fluttering/thumping feeling of the chest).</li> <li>b) Fatigue.</li> <li>c) Rapid/irregular heartbeat.</li> <li>d) Shortness of breath.</li> <li>e) Anxiety.</li> <li>f) Faintness or confusion.</li> </ul> </li> <li>6) Symptoms of pulmonary embolism <ul style="list-style-type: none"> <li>a) Sudden shortness of breath.</li> <li>b) Cough.</li> <li>c) Production of bloody mucous.</li> <li>d) Fast heartbeat.</li> <li>e) Anxiety.</li> <li>f) Chest pain.</li> </ul> </li> <li>7) Symptoms of bleeding <ul style="list-style-type: none"> <li>a) Cold, clammy, pale/blue skin.</li> <li>b) Confusion/ decreased alertness.</li> <li>c) Weak pulses.</li> <li>d) Low blood pressure.</li> <li>e) Fast heartbeat.</li> <li>f) Shortness of breath.</li> <li>g) Weakness.</li> </ul> </li> <li>8) Signs of worsening heart failure <ul style="list-style-type: none"> <li>a) Increase shortness of breath and work of breathing.</li> <li>b) Weight gain of more than 3lbs in 2 days or 3-5lbs. in a week.</li> <li>c) Persistent cough with possible presence of bloody sputum.</li> <li>d) Dizziness/lightheadedness.</li> <li>e) Wheezing.</li> <li>f) Worsening fatigue.</li> </ul> </li> </ul>
<b>Other</b>	<ul style="list-style-type: none"> <li>1) Mental health information due to hx of chronic illness and smoking.</li> <li>2) Support groups for illnesses ang smoking cessation.</li> <li>3) Local programs to help with financial burden.</li> </ul>



## 10 ways to improve your heart health



**1** Balance calories eaten with physical activity.



**2** Reach for a variety of fruits and vegetables.



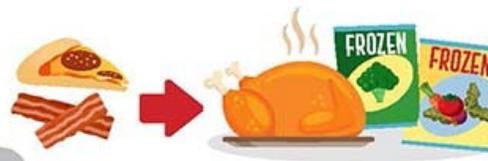
**3** Choose whole grains.



**4** Include healthy protein sources, mostly plants and seafood.



**5** Use liquid non-tropical plant oils.



**6** Choose minimally processed foods.



**7** Subtract added sugars.



**8** Cut down on salt.



**9** Limit alcohol.

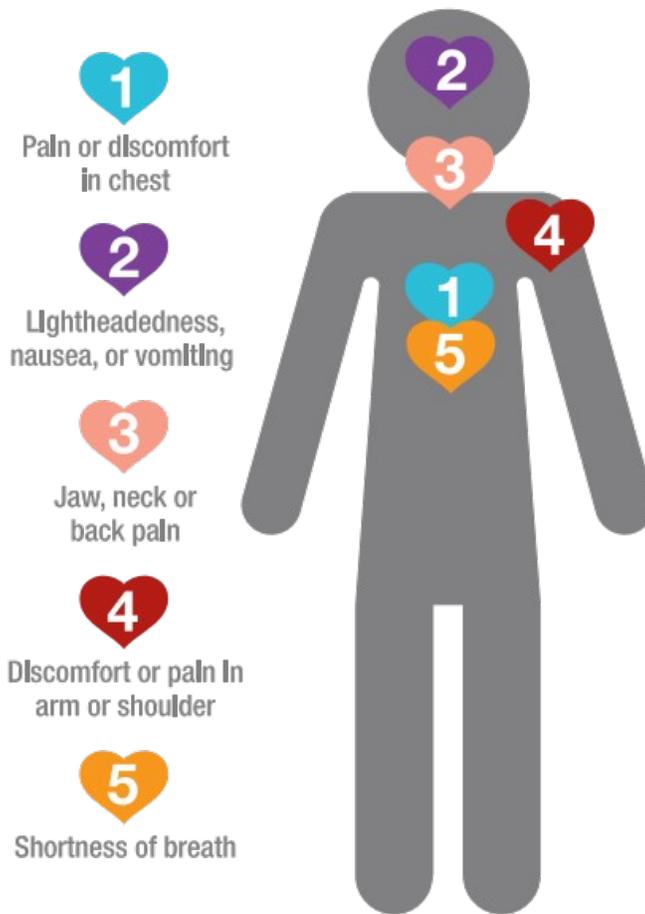


**10** Do all this wherever you eat!

Need more food for thought? Go to [www.heart.org/eatsmart](http://www.heart.org/eatsmart)



# Common Heart Attack Warning Signs



**Learn more at [Heart.org/HeartAttack](https://www.heart.org/HeartAttack).**

DIAGNOSIS: Heart Failure



# Self-Check Plan

for HF Management

## ✓ Excellent – Keep Up the Good Work!

- No new or worsening shortness of breath
- Physical activity level is normal for you
- No new swelling, feet and legs look normal for you
- Weight check stable  
Weight: \_\_\_\_
- No sign of chest pain

**GREAT!  
CONTINUE:**

- Daily Weight Check
- Meds as Directed
- Low Sodium Eating
- Follow-up Visits

## 🚩 Pay Attention – Use Caution!

- Dry, hacking cough
- Worsening shortness of breath with activity
- Increased swelling of legs, feet, and ankles
- Sudden weight gain of more than 2-3 lbs in a 24 hour period (or 5 lbs in a week)
- Discomfort or swelling in the abdomen
- Trouble Sleeping

**CHECK IN!**

Your symptoms may indicate:



A need to contact your doctor or provider



A need for a change in medications

## ⚠️ Medical Alert – Warning!

- Frequent dry, hacking cough
- Shortness of breath at rest
- Increased discomfort or swelling in the lower body
- Sudden weight gain of more than 2-3 lbs in a 24 hour period (or 5 lbs in a week)
- New or worsening dizziness, confusion, sadness or depression
- Loss of appetite
- Increased trouble sleeping; cannot lie flat

**WARNING! You need to be evaluated right away.**



Call your physician or call **911**

[heart.org/HF](http://heart.org/HF)

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## SMOKING CESSATION: Benefits

<https://www.youtube.com/watch?v=KX82NJMguvA>

### Resources

American Heart Association. (n.d.). *Heart attack*. www.heart.org. Retrieved April 23, 2023, from <https://www.heart.org/en/health-topics/heart-attack>

YouTube. (n.d.). *Centers for Disease Control and Prevention (CDC)*. YouTube. Retrieved April 23, 2023, from <https://www.youtube.com/@CDC>