

Cell Biology Theater

Mystery Diagnosis: The Poisoned Girl

Activity: Students role-play in a TV Series about the untimely death of the president's daughter Ms. Alisha Marista. Lieutenant Robinson and his detective crew are called to the crime scene in YOUR TOWN to investigate a fatal roadside armed robbery.

SETTING - NIGHT

Ms. Marista was driving back from a restaurant. She was shot and robbed while stopped at a red light. But at the hospital, test results from the lab indicate ... poison was detected.

CAST

Director:

Narrator 1:

Lieutenant Robinson:

Ms. Marista:

Robber:

Witness:

911 Operator:

Ambulance Driver:

EMT:

News Reporter:

Doctor:

Nurse:

Lab Technician:

President:

Episode 1: Dramatization/Cell Breakdown.

SETTING - Green Screen.

NARRATOR: It's 2am. MS. MARISTA is the President's daughter and she is driving home from a birthday party at a restaurant where she ate chicken wings at 9pm. This is her story.

MUSIC. The beginning with an intro and music.

Ms. Marista is driving in her car.

MS. MARISTA: The food was good, especially the birthday party. Oh gosh a red light and it's 2 am. I want to get home. I need to put these leftovers in the refrigerator.

ROBBER: Stop what you're doing and give me your things. This is a robbery. Don't move or you'll get it.

MS. MARISTA: omg please don't do anything I'll give you what I got please.

ROBBER: Give me your money now!! Boom 
Runs away.

WITNESS: omg are you okay?
Looks around.

WITNESS: OK, he is gone.
Takes Ms. Marista's pulse.

WITNESS: Your pulse is 12 heart beats in 20 seconds. Times 3. That's 36 beats per minute. Your circulatory system is losing blood! Let me call 911.

911 OPERATOR: 911 what is your emergency?

WITNESS: Please help! Someone got shot. She's bleeding, has 36 beats per minute and LOW BLOOD PRESSURE. Not enough oxygen is getting to her lungs.

Ms. Marista hands him her driver's license.

WITNESS: And she's the President's daughter!

911 OPERATOR: Stay calm. I'll send Sergeant Robinson and Jamaica Avenue EMS. I said, stay calm.

LIEUTENANT ROBINSON ENTERS STAGE RIGHT.

911 OPERATOR: Sargent Robinson come right away! President MORALES' daughter got shot! This is an emergency!

LIEUTENANT ROBINSON: Location please.

911 OPERATOR: The victim got shot near the Chuck E Cheese in Howard Beach.

LIEUTENANT ROBINSON: Copy. On the way there now.

PART 2

AMBULANCE DRIVER, EMT and LIEUTENANT ROBINSON arrive on the scene. Ms. MARISTA is lying on the ground by the car.

LIEUTENANT ROBINSON eats a donut to boost his energy.

EMT: Officer, that's not nutritious. Simple carbohydrates will raise your glucose.

LIEUTENANT ROBINSON: Yea,, but I need energy now. It's gonna be a long night.

AMBULANCE DRIVER: Eat roasted chicken. Protein and lipids build muscles and strength.

LIEUTENANT ROBINSON hands his donut to the EMT. The EMT throws the donut in the trash.

EMT takes Ms. Marista's pulse. He sees her "Diabetes Medical Bracelet."

EMT: She has Diabetes 1! Her pancreas doesn't produce enough insulin to regulate sugar.

AMBULANCE DRIVER searches the car and finds the leftover box.

AMBULANCE DRIVER: Look, pasta and chicken wings. She ate most of it.

LIEUTENANT ROBINSON takes a CHUCK E. CHEESE menu from her purse. He puts it in a plastic bag marked "evidence."

EXIT.

PART 3

HOSPITAL ROOM

AMBULANCE DRIVER and EMT put MS. MARISTA on the hospital bed and leaves. NURSE YESSE takes vitals. LAB TECHNICIAN takes the bullet out of MS MARISTA and studies it in a microscope.

NURSE YESSE: The patient is unstable. She's bleeding everywhere. Heartbeat 36. Not enough oxygen is reaching her circulatory or respiratory systems! Code Blue emergency!

Nurse Jessi pushes an emergency button. DOCTOR ODALIS enters.

DOCTOR ODALIS: What's the CODE BLUE emergency?

NURSE YESSE: The patient has lost homeostasis in all body systems. She's diabetic 1 and had birthday cake, chicken wings and pasta at Chuck E. Cheese and...

DOCTOR ODALIS: Diabetes 1?! Give the patient insulin to lower blood sugar levels. That should do it.

NURSE YESSE: No, you don't understand. That's not the primary symptom.

DOCTOR ODALIS: Of course it is. The patient has dangerously high blood sugar.

LIEUTENANT ROBINSON re-enters.

LIEUTENANT ROBINSON: The problem is the patient was shot!

DOCTOR ODALIS: You're right. She's losing blood in the circulatory system. Oxygen is not getting to cells for cellular respiration to make ATP energy.

EMT: Oh my God. The patient is losing blood pressure. 90 over 50.

DOCTOR ODALIS: Apply pressure immediately!

Everyone wraps Ms. MARISTA with cloth and applies pressure on her shoulder.

DOCTOR ODALIS: Vitals please.

NURSE YESSE: Resting pulse rate is 80 beats per minute. White Blood Cell count is 7000 - both normal range.

DOCTOR ODALIS: But she's still almost dead.

EMT: Something is not right.

LIEUTENANT ROBINSON shows Chuck E. Cheese menu.

LIEUTENANT ROBINSON: This.

EVERYONE: What!? What is that? What's going on?

LIEUTENANT ROBINSON: Chuck E Cheese doesn't sell pasta.

EVERYONE: That's right. Only wings and pizza. And salad. Where'd she get the pasta?

LIEUTENANT ROBINSON: The President's daughter was poisoned.

MS. MARISTA: I tried to tell you. I was poisoned.

DOCTOR ODALIS: Shhhh! She's talking.

MS. MARISTA: I ordered the wings.

PRESIDENT MORALES and REPORTER Enter.

PRESIDENT MORALES: I ordered the pasta from Red Lobster. Special order. My daughter has diabetes and would never eat that many carbohydrates in her condition.

REPORTER: Mr. President. The Police found the pasta in your daughter's car. How do you explain that?

Lab technician steps forward.

LAB TECHNICIAN: Ms. Marista was driving the president's car. She borrowed it to go home.

EVERYONE gasps.

REPORTER: How do you know?

LAB TECHNICIAN: Saliva residue. The President has unique substrates in his saliva enzymes. Forensic evidence found the president's enzymes in the take-out box with pasta.

LIEUTENANT ROBINSON: Ok, listen up. Here's how it happened.

RE-ENACTMENT

NARRATOR: Ms. Marista put a lot of salt on her food at the birthday party. While driving home in her dad's car, she stopped at the light and took a sip of her 1 liter of soda.

NARRATOR (continues): That's when the assassin's (The WITNESS and ROBBER wearing disguises) had time to rush the vehicle pretending to rob who they thought was the president.

LIEUTENANT ROBINSON: And bam! But they realized they got the wrong person. The president's daughter was in the vehicle. So they pretended to be witnesses and called 911 (Take off disguises.)

LIEUTENANT ROBINSON: You knew too much about her to be strangers.

WITNESS and ROBBER: Yea, we did.

LIEUTENANT ROBINSON: So why did you want to bring the President down anyway?

PRESIDENT MORALES: Which one of these suspects put you up to this?

Show picture of Lil Baby, Pasta Flocco, Teacher

WITNESS: Honestly I don't remember the name.

ROBBER: I swear.

LIEUTENANT ROBINSON: I'm going to talk to you later.

PRESIDENT MORALES: Crime doesn't pay. Both of you will do community service at a chef school. When you graduate, you will be qualified to get jobs at a restaurant. You could save up and get your own restaurant.

MS. MARISTA: What about me?

NURSE YESSE: The patient has achieved homeostasis.

DR. ODALIS: You are dismissed.

Robber, Witness, Lab Technician, Nurse Yesse and Dr. Odalis exit.

LIEUTENANT ROBINSON: What about me?

PRESIDENT MORALES: Appreciate your fine work. You get a badge and a gift card to Planet Fitness.

LIEUTENANT ROBINSON: Do I even get a bonus? How about a day off?

PRESIDENT MORALES: No. See you tomorrow at 9am. But you can date my daughter.

LIEUTENANT ROBINSON and Ms. Marista Exit.

EMT: What should we do now?

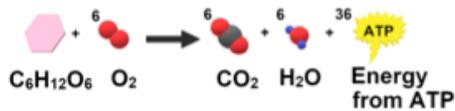
Everyone: Go to Planet Fitness!

NARRATOR: That concludes our medical mystery. Monitor your vitals and maintain a healthy lifestyle. Fitness and nutrition solves the mystery. Case Closed.

Living Environment/Biology Vocabulary:

Biotic means = living

cellular respiration - in the mitochondria.
glucose, oxygen makes —> carbon dioxide, water

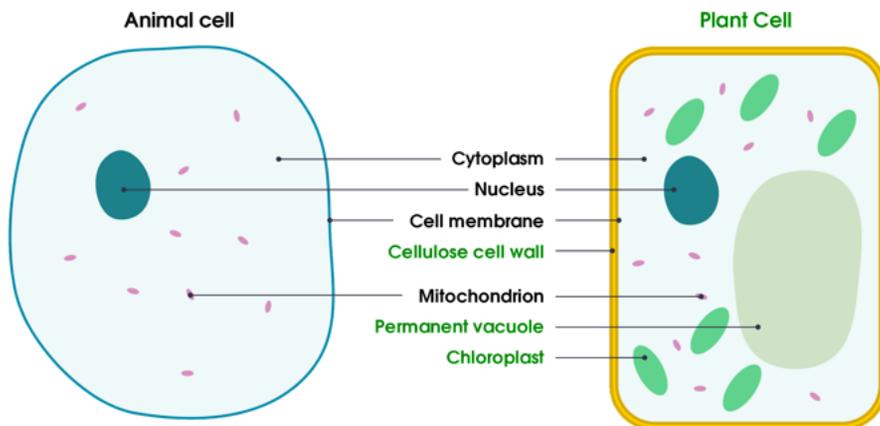


Exercise increases pulse rate because more oxygen is needed to make more ATP energy.

O₂ = oxygen

CO₂ = Carbon DiOxide

Organelles



BODY SYSTEMS

Homeostasis - the body responds to the environment to maintain internal stability. Ex. Sweating when hot, shivering when cold.

Organ systems interact in our body to maintain **homeostasis**.

Respiratory system - exchange of gasses O₂ and CO₂ in the blood (circulatory system) to produce ATP energy.

Circulatory system - blood transports O₂, CO₂, waste and nutrients throughout the body.

When checking **pulse rate/heart beat**, the circulatory system (blood flow) and respiratory system (oxygen levels) are being checked.

Exercise increases pulse rate because more oxygen is needed to make more ATP energy for the activity..

Digestive system takes in nutrients, excretes waste.

Feedback mechanisms. The pancreas tells the body to make **more insulin to lower blood sugar** when it's too high OR eat more food (glucose) when blood sugar is too low.

Insulin makes glucose levels go down ↓.

Glucose ↑ raises glucose levels.

Glucose, sucrose, fructose are sugars.

Complex carbohydrates (apple); Simple carbohydrates (donut)

Waste and water is removed from the body by kidneys and the bladder in the **excretory system**.

Proteins – building blocks. Lipids - fats.

Enzymes chemically break down food faster in the **digestive system**.
Ex. saliva, bile.

Exercise increases pulse rate because more oxygen is needed to make more ATP energy.