ACTIVITY 1A  STUDENT HANDOUT
PLAY — DESPERATELY SEEKING INSULIN

CHARACTERS:

- Dr. Langerhans (narrator)
- Type 1 patient
- Type 2 patient (an older person; needs to wear gray wig and pillow for a “belly”)
- insulin (the hero) (holds a key, wears a cape; also needs R.I.P. “tombstone”)
- pancreas
- cell (10 people)
- sugar (5 people; one will be sugar #1, and the other sugar #2; both have speaking parts)
- urine (3 people)
- ketones (2 people; one will be ketone #1, and the other ketone #2, both have speaking parts)
- left foot
- right foot

PROPS:
(The room should be set up to simulate the inside of the body)

- Diagram of a human body and a pointer (not the dog!)
- An area to be Dr. Langerhans’ office
- An aisle with red butcher paper for the bloodstream
- An area denoted as the bladder
- A cape and key for the hero—insulin
- A sign, one side says “Pancreas,” the other side “Pancreas—out of order”
- Five sugar signs, three urine signs, and two ketone signs
- Gray wig for Type 2 patient
- Pillow for Type 2 patient
- R.I.P. sign for Insulin (can be shaped like a tombstone)
- A box labeled “Glucometer”
Act I: A Demonstration of a Type 1 Diabetic

(Opening scene: Dr. Langerhans is in his office with his diagram and pointer. The patient walks in.)

Type 1 Patient: Doctor, doctor! I haven’t been feeling like myself lately! I have lost a lot of weight, yet I still eat the same amount of food. And I am so thirsty, that I could drink up the Gulf of Mexico! I have to urinate all of the time, and I am always so tired!

Dr. L: (says to the audience:) Hmmm, it sounds like characteristic symptoms of diabetes. (says to patient:) Do you ever experience blurred vision? Have you had any infections or wounds that are slow to heal? Are you experiencing muscle cramps, or increased hunger?

Type 1 Patient: Well, Dr. Langerhans, sometimes my vision gets a little blurred, and I have been a lot hungrier lately. Do you think you know what ails me?

Dr. L: Hmm, you have had extreme thirst, hunger, and increased urination. You are under 30, and you are not overweight. Sounds like you have diabetes to me! To be sure, we need to check the level of sugar in your blood. (Type 1 patient puts hand in box labeled glucometer/sugar meter) Wow-eee! Your blood sugar level is 250, and that’s way over the 100 level where it’s supposed to be! Yup, you have diabetes all right. Let’s travel inside of the human body so that I can explain the disease to you!

(Pancreas stands by Dr. L, and insulin stands behind Pancreas. The cell people get into a circle. Urine and ketone people sit in the bladder area, and the sugars stand next to the cell)

Dr. L: is ready with his pointer stick to point out the following organs on the diagram, as the organs introduce themselves.

Pancreas: Hi! I’m the pancreas, and I am located behind your stomach, against the back wall of the abdomen! Inside of me, Dr. Langerhans discovered small clusters of cells that make and secrete (or give off) insulin.

(Insulin pops out from behind Pancreas)

Insulin: I am insulin, and I am the super hero of this play! I am very important because I have the key to unlock the cells so that the sugars can get into the cells, and the body can get energy! (As Insulin says this part, he walks over to the cell and places the key between two “cell people” to “unlock” the two cell people to let the sugars go into the cell; the ten people make up the cell membrane.)

(Set returns to Insulin behind Pancreas, and the sugars standing outside of the cell)
**Dr. L:** In Type 1 diabetes, the process doesn’t work the same. *(Pancreas flips his sign over to say “out of order.”)* Our hero, Insulin, is not made by the Pancreas, so that the sugars don’t get into the cells.

*(Insulin “dies,” and holds up the R.I.P. “tombstone.”)*

*(Sugars, ketones, and urines need to act out the following part, as script is read.)*

**Sugar #1:** When we don’t get into the cell, the body feeds on fat for energy. We sugars then collect in the blood stream, where we eventually end up in the bladder.

**Sugar #2:** In the bladder, we sometimes combine with ketones, and are excreted with the urine out of the body. That is why doctors can use either blood tests or urine tests to check sugar levels to see if someone has diabetes or not.

**Ketone #1:** Doctors can also use urine tests to measure ketones, which collect in the urine. Certain ketone levels can indicate serious problems.

**Ketone #2:** We ketones are a product of incomplete fat burning because the body burns fat for energy in Type 1 diabetics. That is why rapid weight loss is a symptom for Type 1 diabetes.

**Dr. L:** Once someone is diagnosed with Type 1 diabetes, it is important to control the diabetes with a sugar-controlled diet, exercise, and with taking insulin by daily injections. Diabetics also need to pay careful attention to their bodies, especially their feet.

**Left foot:** Diabetes can narrow blood vessels, making them smaller. This cuts down on blood circulation. Diabetes also slows down the speed of signals in the nerves. Both problems with the circulation and nerves can cause numb or tingly feelings in the feet and legs. If a diabetic gets a cut or sore on their foot, they may need to see a doctor, because that cut may not heal as quickly as in a non-diabetic.

**Right foot:** It is very important to keep us feet clean and dry, and to check us for wounds that don’t heal. Otherwise, if infections such as gangrene set in, we have to be amputated, meaning we’ll be chopped off!

Type 1 Patient: Other complications include: increased risk for heart disease, risk of kidney failure or disease, risk of stroke, changes in the eyes that threaten vision, gum disease, and tooth loss.

**Dr. L:** With proper diet, exercise, and care, a diabetic can live a long, normal, productive, and happy life!
Act II: A Demonstration of Type 2 Diabetes

(This scene starts back in Dr. Langerhans office. The Type 2 patient walks in. This patient is an overweight elderly patient, and should be wearing the gray wig and the pillow for a “belly.”)

Type 2 Patient: Doctor Langerhans! Good to see you again! Did you get my blood tests back yet? I’m sure everything is A-OK, because I feel great!

Dr. L: Why, yes I did! You, my friend, have Type 2 diabetes. Even though you may not have extreme symptoms like our Type 1 friend, Type 2 diabetics often have no symptoms at all. Slight symptoms such as feeling tired and edgy may indicate a problem. Small increases in thirst, hunger, and/or urination in people over 40 may be indicators of diabetes, but are often dismissed as signs of growing older. Since you are over 40, have a family history of diabetes, and are overweight, you had a strong chance of developing diabetes.

Type 2 patient: Gee, Doc, what do I do now?

Dr. L: Unlike our Type 1 patient who has to take insulin because his/her body no longer makes insulin, diabetes in you can be controlled much easier — through a sugar-controlled diet, weight loss, and exercise.

(Pancreas [out-of-order], cell, sugars, and Insulin reenter the scene in previous demonstration position.)

Insulin: In your body, the Pancreas may not make enough of me, or else there could be enough of me, but the body does not use me properly. Instead of being happy to see me, the cells resist my offers to help them get the sugars they need. Enough sugars do not get into the cells. (Insulin tries to “unlock” the cell to let the sugars in, but the cell resists. Insulin then stumbles around, hurt and confused.) You will need to control and limit the amount of sugar that you eat. Perhaps if you lost weight, watched your diet, and exercised regularly, I would be able to do my job, and the diabetes would be under control! (Insulin is now able to let all of the sugars into the cell.)

Type 2 patient: I see! So I need to control the sugar in my diet and watch my weight to keep my diabetes in line!

Dr. L: Don’t forget to exercise! Keeping your diabetes under control will help you to avoid complications. Remember, with proper diet, exercise, weight control, and care, a diabetic can live a long, normal, productive, and happy life.