VIDEO TRANSCRIPT

## A Look inside the Lab: Flow Cytometer – Video transcript

In flow cytometry, we use different types of instrumentation to measure different groups of cells and to separate and collect the cells of interest from the rest of the sample.

So, the way flow cytometry works, it depends on the instrumentation. Analyzers, it's more for an analysis to see how the experimentation worked, or which cells are reacting to whatever treatment you've done to them. If you have a sorter, you will get back cells that you can continue on with your experiment, but analyzers, you do not get the cells back; they go to the waste.

Basically, to prepare cells, the cells of interest are marked with a fluorescent label. As each cell passes through the machine. It's going to go past a laser, or several lasers. The laser excites the fluorescent tag, it creates a pulse; this pulse is read by the instrumentation and then shows up as a dot onto a graph.

The first graph we look at when we're analyzing data, is our forward and side scatter, and it gives us a quick overview of what kind of cells may be in there per size and complexity. The forward scatter of light, or what shines straight through the cell, enables scientists to measure its size. The side scatter of light, or what shines through the cell at an angle, indicates the complexity of the cell by measuring the scattered light.

The flow cytometer is a powerful tool in the study of diseases. It aids in the classification of leukemias which can determine which form of treatment the patient should receive.

Another use allows doctors to check natural killer cells after a bone marrow transplant. Flow cytometry has also played a crucial role in diagnosing and treating HIV, by enabling researchers to see the number and types of T cells an infected patient has in their bloodstream.