Jim Januzzi KOL Video 1: Communicating CRISPR/Cas9 to Patients Transcript

00:09 – 00:16
People have been hearing about Crispr in the news recently, but it's actually been around for quite a while.

00:16 – 00:25
It was originally described in 1987, so we're nearly 40 years now since the original description of what CRISPR is.

00:25 - 00:32
Patients might actually be interested to know that Crispr is being used on an everyday basis in agriculture and farming.

00:32 - 00:52
But it's taken several decades for it to come to medicine, where it is now being examined in a number of disease states, including diseases in the blood, as well as other diseases that involve the liver, the eyes, and even cancer.

00:52 - 01:06
Introducing the concept of CRISPR/Cas9 to patients may be a little bit tricky, because it's important for them to understand that everything that we are to one degree or another, comes from our DNA. DNA makes proteins.

01:06 - 01:08
Proteins may lead to disease.

01:08 - 01:12
These proteins may be normal at first and then get changed.

01:12 - 01:16
They may be abnormal from the beginning, once they're secreted by the body.

01:16 - 01:28
And so, understanding the underlying biology of disease is important in order to understand what Crispr Cas9 really is and how it can help patients.

01:28 - 01:35
Given the fact that DNA makes proteins, there's been an obvious interest in trying to get right to the source.

01:35 - 00:01:38
That's where CRISPR/Cas9 comes in.

01:38 - 01:48
CRISPR/Cas9 is a way to come right down to the DNA level and edit the DNA to either, for example, silence a gene, shutting it off.

01:48 - 02:10
We might be able to edit a gene. So to fix an error in the DNA. We might even be able to insert a message into the DNA in order to have it express a different type of protein. So Crispr brings to us a number of different possible ways to address abnormalities at the DNA level.

02:15 - 02:18
There are a lot of different ways that Crispr can be used in medicine.

02:18 - 02:29
One option is to apply it outside of the body, in what we call an ex vivo approach, which is to isolate cells, treat them, and then reintroduce them into the body.

02:29 - 02:32
With an ex vivo approach, it may require multiple rounds of treatment.

02:32 - 02:49
Another so-called in vivo approach is to just simply use a single CRISPR treatment into the body. So straight to an organ where a single treatment might be effective to alter the DNA and change the trajectory of a specific disease.