# How to Understand, Compare, and Choose a Molecular Test

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**Lisa Tomcko:**

Welcome to the latest edition of the College of American Pathologist CAPcast. I'm Lisa Tomcko, content specialist with the CAP. With the wide range of molecular tests available, other non-pathologists' physicians will inevitably ask for guidance on testing to help make an accurate diagnosis. As leaders in the medical laboratory, pathologists are important gatekeepers to the highest value use of ancillary testing techniques for patient samples. So how can a pathologist prepare for the questions before they come?

The new clinical pathology improvement program case, choosing a molecular test techniques decoded can help. In this episode, I'm joined by author of the case, Dr. Jennifer Yoest, who also serves on the CAP's Clinical Pathology Education Committee.

Dr. Yoest, thanks so much for coming on the podcast to talk about this new CPIP case. Would you like to introduce yourself?

**Dr. Jennifer Yoest:**

Yeah, thanks for having me. I am a molecular pathologist at University Hospitals in Cleveland, Ohio, and I am an assistant professor in pathology at Case Western Reserve University. And yeah, I'm happy to be here.

**Lisa Tomcko:**

Great, welcome. And just to dive right in, I want to do some expectation setting for younger or maybe less experienced listeners. How frequently would you say you answer questions about choosing appropriate molecular testing techniques from other physicians?

**Dr. Jennifer Yoest:**

I answer questions like this pretty frequently actually. Some weeks it seems like almost every day that I'll be contacted by a colleague that is looking for guidance on what molecular testing to order, whether that's fellow pathologists or clinical colleagues in medical genetics or oncology. Even if the question is not specifically about the technique, the technique used in the testing that we're considering is always important when helping my colleagues choose the right testing to order.

**Lisa Tomcko:**

So it sounds like a pretty common occurrence and really an integral part of the role. And can you give us an example from your own practice of when you had to field these types of questions and what happened?

**Dr. Jennifer Yoest:**

Yeah, actually, all the cases in this activity are real life examples of cases that my colleague, Dr. Larissa Furtado, and I have seen in practice. One example that I was not able to include was something that I saw last year. An oncologist was comparing two different NGS panels that had been run on the same patient and the reports appeared to be discrepant and she was looking for a reason why. And as it turns out, one of them was from a reference lab and one of them was from our in-house panel. And it took a little bit of sleuthing. And in the case, I will give the learners some tips on how to read those reports and how to look for the signs. But as it turned out, the panels were not the same. Every NGS panel is different and the two panels just didn't cover the same material, which is why some of the findings were on one report and not on the other. So that kind of solved the mystery for us.

**Lisa Tomcko:**

Yeah, such an interesting thing to pick up on. And more broadly, how do you think this case will help pathologists in their practice as time goes on?

**Dr. Jennifer Yoest:**

Molecular techniques are really changing quite a bit. It's a lot to keep up with even if you have fellowship training or experience in the field. And so my colleague and I designed this activity to cover the key features of several of the most widely used techniques so that it would be broadly applicable to the types of testing that pathologists will encounter across solid tumor testing, hematopoietic tumor testing, and even germline genetics testing. And it should work well as either a refresher for those who have some experience or a solid introduction to these techniques for someone who has less experience with them so that they can feel more confident ordering molecular testing or guiding their colleagues to order molecular testing.

**Lisa Tomcko:**

Definitely. It sounds like this case will be very beneficial for a broad spectrum of pathologists, really. And I'm guessing this topic must also touch on things like test utilization practices and laboratory resource allocation. But can you maybe confirm and give us your thoughts on that?

**Dr. Jennifer Yoest:**

Yeah, that's a great question. I think as physicians and as pathologists especially, like you mentioned, it's really important to steward the sample material, the patient's resources and the systems resources carefully. This is especially important in molecular testing where the testing can be costly and time consuming, and I think it's very important to have a solid understanding of the strengths and the limitations of those commonly utilized molecular techniques. So that will ensure the right molecular assay is chosen for the goals of testing and that these resources are used in the most efficient way possible.

**Lisa Tomcko:**

So it sounds like there are broader implications at play here, then simply choosing the correct test since they're also costs involved. And finally, any closing thoughts you'd like to share with us?

**Dr. Jennifer Yoest:**

I think that molecular testing is only going to become more common, more prevalent, and even more important part of the practice of pathology. And these techniques that we discuss are really foundational to understanding all of the different testing options that are available right now. And they're going to underlie the testing options that are going to be developed in the future as well. I think the information presented in this activity is going to be really helpful for anyone in the field who would like a little bit more information, a little bit more experience.

**Lisa Tomcko:**

Well, thank you so much Dr. Yost for sharing your experience and giving us a look into the case. I want to encourage all those listening to check out Choosing a Molecular Test: Techniques Decoded.

You can find the link in the description. You can also find the link to the larger Clinical Pathology Improvement Program, which has lots of other cases to check out. And stay tuned for future episodes of CAPcast. And for more information from the CAP visit cap.org.