

# Fred Hutch Deploys AI Technology to Help Analyze Colonoscopies

During a colonoscopy, GI Genius flags suspicious findings with a green square.

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Endoscopists who perform colonoscopies are trained to zoom in on the nooks and crannies of the colon, the glossy pink five-foot-long tunnel that snakes through the abdomen.

They are on the prowl for polyps, small clumps of cells that may turn cancerous if not removed.

“Some polyps are quite large and we would never miss those,” said [David Hockenbery, MD](#), medical director of the procedure suite and head of gastroenterology and hepatology at Fred Hutch Cancer Center. “Some are round and stick into the center of the lumen [the area that food passes through] and hopefully we wouldn’t miss those.”

Other polyps are flat and don’t stick up into the middle of the colon; endoscopists are more likely to miss those types of polyps, which makes it more likely that an undetected polyp may go on to develop into [colon cancer](#).

These stealth polyps are a perfect match for [GI Genius](#), a new artificial intelligence (AI) technology that Fred Hutch is using to read colonoscopy scans.

“We are early adopters, and we are already seeing that AI can really help,” said Hockenbery, who explains how GI Genius helps endoscopists do their jobs in this Q&A:

When did Fred Hutch start offering AI interpretation?

We started last year. We are new to this. We are one of the only places in Seattle offering this. We have one provider, [Neel Dey, MD](#), who is particularly interested in emerging technologies. He started the conversation about AI in our endoscopy unit: on the one hand, it could improve polyp detection not only directly but also indirectly by reducing fatigue of the endoscopist; on the other hand, AI models have non-zero error rates and can manifest biases of the underlying training data, so we needed to ensure that whatever we did would benefit our patients. We spent some time talking with the vendor about this and looking at examples of what they could do, and we thought it would be quite useful.

How does it work?

When you do a colonoscopy, there are continuous images projected on a screen. GI Genius analyzes every image. If something appears elevated or depressed, it will put a green square around what it thinks is a polyp. That calls our attention to it, and then we determine if it is a polyp, in which case we take it out.

Is it making a difference in detection?

GI Genius is so new for us that we don't have enough data yet. It's a two-way street: as centers around the country begin to use this more, the company is using data we generate to improve the algorithm so it's more accurate. But all of our users have had at least one instance where it called attention to something we might have passed up, like flat polyps which are especially challenging because they are covered with mucus so you have to first wash the mucus away. This gives us a sense of confidence that we're not missing things.

The colon is a long tube with folds like peaks and valleys. It's not always easy to see into the valleys to the full extent. If you get a glancing image of something and then you see a green rectangle on it, you will go back and take a better look. And if you find something by virtue of AI that you otherwise might not have seen, you realize you need to adjust the way you're examining.

I'm excited about the future because I think the AI versions that will come out in the future will include things like what percentage of the colon did you actually have in view during the procedure.

Eventually there will be studies about whether this saves lives. Those sorts of studies take a long time because a polyp might take 10 years to turn into cancer.

Are there any risks?

We have set the threshold for this tech low enough that there are a lot of false calls. We might see mucus or a bubble picked up by the software as a polyp, so we are used to looking closer. This will never replace the endoscopist, but we are seeing where its strengths are, then using our own good judgment. The risk is you become so reliant on AI that you stop looking yourself. And depending on where you practice, they may not have this so you don't want to become too reliant. It enhances what the endoscopist does; it doesn't replace it.

Is GI Genius used for every colonoscopy at Fred Hutch?

Yes, we have three units that we use in the three rooms where colonoscopies are performed, so every patient gets this technology. The [current recommendation](#) is that everyone 45 and above get their colonoscopy screening. We also see people at increased risk and those who have had colorectal cancer. This technology is especially helpful for those sorts of patients and those with genetic syndromes [such as [Lynch syndrome](#)].

Are other disciplines at Fred Hutch using AI?

We are one of the first. It is being used more broadly in some areas, for example, in reading pathology slides. Other areas are ripe for the use of AI.

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