



HOURS TO MINUTES: AI GENERATING PERSONALIZED RADIATION TREATMENTS



A cancer diagnosis comes with a sense of urgency. Patients, families, and health care providers all want treatment to start as quickly as possible. It's no different for **Dr. Tom Purdie**, Medical Physicist, and **Dr. Chris McIntosh**, Techna Researcher. Their efforts to increase efficiency of radiation treatment planning – to get patients the right treatment sooner – led to the development of AutoPlanning, with the support of the Techna Institute.

"AutoPlanning uses artificial intelligence (AI) and deep-learning algorithms to harvest information from a massive database of high-quality proven radiation therapy plans," says Dr. McIntosh.

Now, instead of relying on radiation therapy treatment plans generated manually – which can take hours or days – plans can be ready for review in minutes. AutoPlanning technology not only makes the complex radiation therapy planning process more efficient, it generates highly-personalized plans best suited for each patient.

"When I was in graduate school, none of this was on the radar," Dr. Purdie says. "We require tremendous expertise and experience to generate plans. With

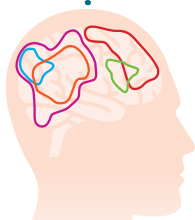
AutoPlanning, we are learning from hundreds to thousands of cases we already know are good. We can draw on that experience to improve the way we deliver radiotherapy to patients."

Radiation treatment plans must be designed to direct sufficient radiation at tumours, while avoiding healthy organs and tissues. Today, AutoPlanning determines the correct balance instantly, speeding up the patient's access to treatment that's both tolerable and effective.

"This technology allows the Radiation team to take on more complex cases and provide precision medicine to more patients," says Dr. Purdie.

Earlier this year, UHN announced the licensing of AutoPlanning to RaySearch Laboratories in Stockholm, Sweden. The deep-learning algorithms of AutoPlanning will be available in RaySearch's RayStation treatment planning system next year. With this agreement, groundbreaking technology pioneered at The Princess Margaret will be available to patients around the world. ■

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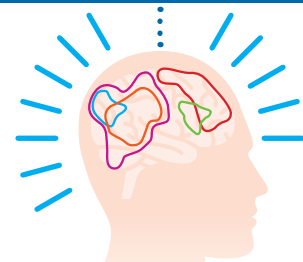
**DEFINE TARGET
AND ORGANS**

AUTOPLANNING



**PREDICT DOSE SPECIFIC
TO PATIENT**

PERSONALIZED PATIENT PLAN



**OPTIMIZE RADIATION
BEAMS AND DOSE**