

[The rise of precision medicine](#)

Submitted by lisac on Fri, 05/24/2019 - 13:07 Targeting each individuals unique form of cancer

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Today we think about cancer in terms of the tumour site—breast, lung, colon, brain, each is separate with different treatments. Precision medicine is a new way of looking at cancer. Instead of focusing on the site of the cancer, it identifies the genetic abnormalities that make cancer possible in individual patients.

Dr. Christine Williams, Vice President, Outreach at the Ontario Institute for Cancer Research offers an analogy: “It used to be one big door and we tested a big group of people to see if they would fit through it. Now that big door is being replaced by thousands of smaller doors, and we have to know which people to lead through which door. We’re looking at fewer big clinical trials and many, many more small ones.”

“Canada is has a smaller population, and we don’t have enough people to go through the new doors we build. That means we’ll need to work with global partners so we can assign enough patients to each trial,” says Dr. Williams. “CCTG’s international reach and reputation for conducting the highest quality research makes it an important part of precision medicine trials going forward.”

CCTG scientists are already designing trials that look at treatments tailored to individual patients. This shift will require CCTG to make some changes. “We have to create a new infrastructure to enable us to conduct precision medicine trials,” says Dr. Janet Dancey. “We need to raise our capabilities because there will be much more data to collect and more complexity to address. It will require new people, new skills, and new technologies.”


Precision medicine is an emerging approach for cancer treatment and prevention that takes into account individual variability in genes,

WHAT IS PRECISION MEDICINE?


It is a new approach in cancer treatment and prevention that considers the individual patient's tumor genetics, physical environment or lifestyle.



GENETICS
 Cancer tumors have genetic profiles that can be sequenced, targeted and treated.



ENVIRONMENT
 Factors in the environment can impact how genes express themselves.



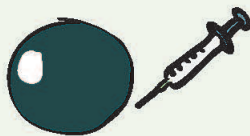
LIFESTYLE
 A person's way of life can point to effective treatment or prevention options.

TUMOR GENETICS

Precision medicine involves tailoring therapies to treat tumors with specific genetic markers.

GENETIC SCREENING

Patients are screened through a tumor biopsy.

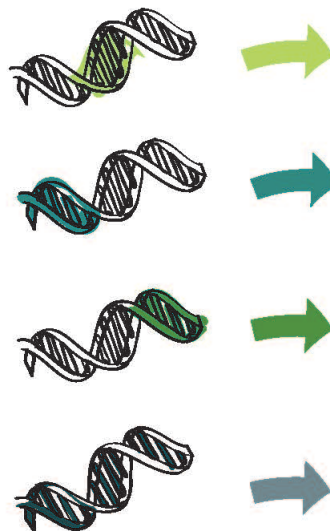


Tumors that share the same genetic abnormality receive targeted treatments regardless of the type of cancer or where it is located.



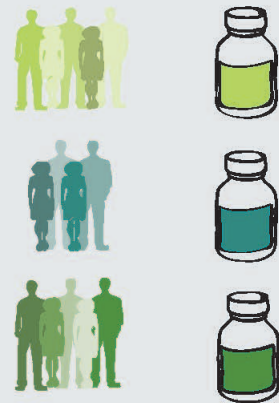
GENETIC SEQUENCING

The tumor biopsy undergoes gene sequencing looking for genetic markers in the tumor.



TREATMENT

A tumor with a specific gene abnormality may have a targeted treatment available.



Some tumor genes don't match current treatments.

