



First volunteer imaging on the MR-LINAC: Edward Taylor PhD, Winnie Li MRT(T), MSc

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# connexions

## FIRST IN CANADA: MR-LINAC TREATMENT FOR PANCREATIC CANCER

In February 2021, the Princess Margaret became the first centre in Canada to complete treatment for a patient with pancreatic cancer on the magnetic resonance imaging guided linear accelerator (MR-LINAC). The MR-LINAC is a state-of-the-art radiation treatment device that combines a magnetic resonance imaging (MRI) scanner with a linear accelerator to guide radiation delivery in real time. Radiation is delivered to the tumour with enhanced precision, while minimizing unwanted dosage to healthy surrounding tissue. The innovative image-guided treatment technology provides high anatomical resolution, allowing physicians to observe a tumour's size, movement and perimeter with greater clarity and adjust radiation delivery accordingly – all while a patient is being treated.

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The Princess Margaret's Multidisciplinary MR-LINAC Team

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## HOW TO REFER PATIENTS

Click here for the [McCain Centre for Pancreatic Cancer Referral Form](#).

For more information, visit the [Wallace McCain Centre for Pancreatic Cancer](#) website.

Referrals to the [Radiation Medicine Program](#) can be made by faxing a [new patient referral form](#) to:

(416) 946-4657.

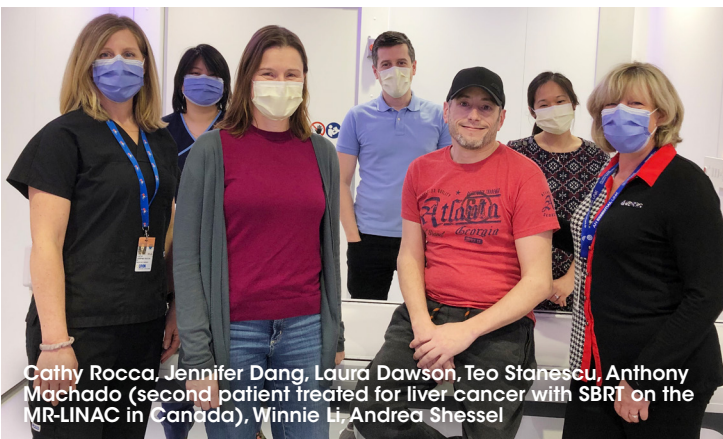
See page 2 for more information.

COVER STORY CONTINUED

The Princess Margaret is part of an international MR-LINAC Consortium, with more than 20 other institutions, which are all collecting data on imaging, treatment doses, tumour control, tissue toxicity and quality of life of patients. We are proud to have contributed to this milestone achievement in Canadian medicine. The design, development and implementation of the Princess Margaret's MR-LINAC was a large interdisciplinary team effort, involving the expertise of over 50 clinicians and researchers. The collaboration of the multidisciplinary MRL Team of radiation oncologists, medical physicists, and radiation therapists was critical to the successful delivery of this personalized, precision-based treatment.

A horizontal timeline with five chevron-shaped arrows pointing right, each containing a year and month. Below each arrow is a corresponding photograph and a text box describing the milestone.

- 2018 January**: CONSTRUCTION BEGAN. Photo shows construction workers in safety gear handling a large piece of equipment.
- 2019 March**: HEALTH CANADA APPROVAL. Photo shows the large circular gantry of the MR-LINAC in a room under construction.
- 2019 September**: PRINCESS MARGARET COMPLETED ITS FIRST TREATMENT FOR A PATIENT WITH **PROSTATE CANCER** ON MR-LINAC. Photo shows the patient lying on the treatment table inside the MR-LINAC gantry.
- 2020 March**: FIRST TWO PATIENTS TREATED FOR **LIVER CANCER** WITH SBRT ON MR-LINAC IN CANADA. Photo shows the interior of the MR-LINAC gantry with the patient table.
- 2021 February**: FIRST PATIENT TREATED FOR **PANCREATIC CANCER** ON MR-LINAC IN CANADA. Photo shows the interior of the MR-LINAC gantry.



## HOW TO REFER PATIENTS

There are many easy ways to have your patients seen at the Princess Margaret's Radiation Medicine Program:

1. Fax a [referral form](#) to the Princess Margaret's New Patient Referral Centre at: (416) 946-2900, or
2. Fax a [referral form](#) to our Radiation Oncology referral coordinators at: (416) 946-4657

Any questions regarding referrals can be directed to our referral coordinators (listed on page 4). For more information, please see our [Referral Process Guide](#).



# PROTON THERAPY CONSULTATION SERVICE AT THE PRINCESS MARGARET

Proton therapy is an advanced type of precision cancer treatment that uses more powerful and precise proton particles, rather than x-rays or gamma rays. Patients receiving proton therapy may experience fewer long-term side effects associated with radiation, as proton therapy has been shown to minimize radiation exposure to normal surrounding tissue while maintaining similar tumour control. At present, Canada does not have a hospital-based proton therapy facility to treat cancer. However, given growing recognition regarding potential benefits of proton therapy, Ontario Health released a [recommendation](#) in May 2021 to publicly fund proton beam therapy for pediatric patients and some adult patients receiving curative intent radiation therapy.

The Proton Therapy Consultation Service at the Princess Margaret aims to raise awareness on the value of proton therapy. This free service generates a personalized proton treatment plan for any cancer patient in Canada at the request of the patient's local oncologist, and informs referring healthcare providers on potential benefits of proton therapy for their patient. Proton planning is performed by a team of physicists, radiation oncologists and trained dosimetrists at the Princess Margaret. The plan is intended to provide referring healthcare providers with a quantitative estimate of dosimetric benefit for evaluative and educational purposes and to help inform treatment decision-making.

Once a receipt of referral has been obtained, an individualized proton plan will be developed and communicated to the referring radiation oncology team within 2-5 working days.

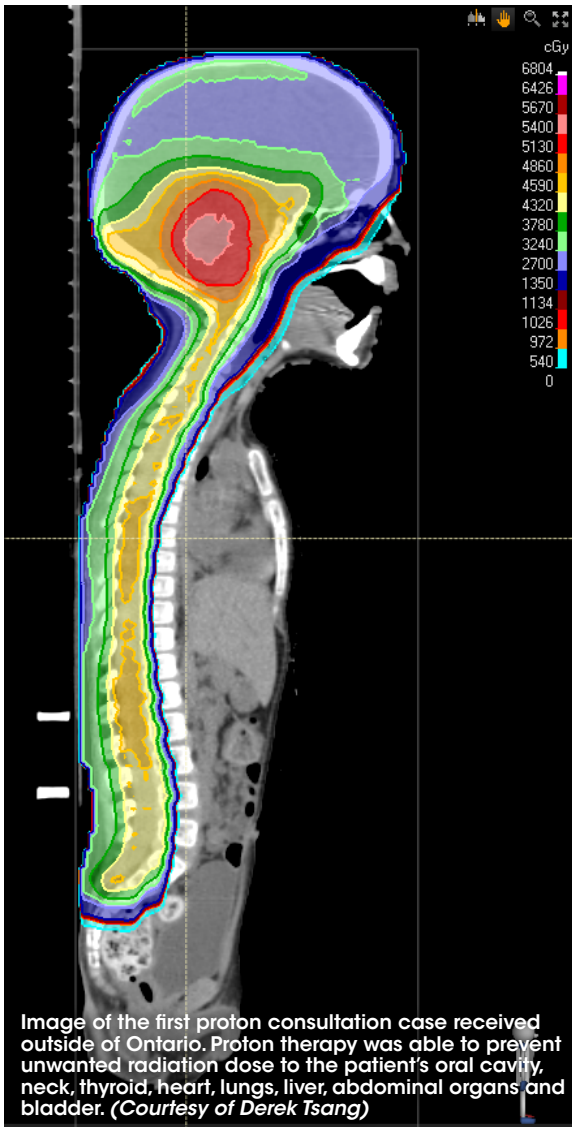


Image of the first proton consultation case received outside of Ontario. Proton therapy was able to prevent unwanted radiation dose to the patient's oral cavity, neck, thyroid, heart, lungs, liver, abdominal organs and bladder. (Courtesy of Derek Tsang)

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"This free service generates a personalized proton treatment plan for any cancer patient in Canada..."

## HOW TO OBTAIN MORE INFORMATION

1. Visit the [Proton Therapy Consultation Service](http://protonsatuhn.ca) website at: <http://protonsatuhn.ca>
2. Contact our Proton Therapy Consultation Service Coordinator at: [Protons@uhn.ca](mailto:Protons@uhn.ca) or 416 946 2121
3. Contact Dr. Derek Tsang, Radiation Oncologist at: [Derek.Tsang@rmp.uhn.ca](mailto:Derek.Tsang@rmp.uhn.ca)

# HOW TO FIND US

## FOR YOUR REFERRALS

We offer three ways to facilitate your requests for consultation:

### 1. Site Group Coordinators

Site group coordinators serve as a liaison for referring physicians, radiation oncologists and the Princess Margaret Patient Referral Centre.

### 2. Princess Margaret New Patient Referral Centre

**Tel:** 416.946.4575  
**Fax:** 416.946.2900

### 3. Direct to Specific Radiation Oncologists

Referrals to specific radiation oncologists should be directed to site group coordinators.

### Palliative Radiation Oncology Program (PROP)

Direct palliative radiation referral patients to our PROP coordinator. Within 24 hours, she will contact you with an appointment. Patients will be seen within a few days.  
[PROPReferrals@rmp.uhn.ca](mailto:PROPReferrals@rmp.uhn.ca)

Coordinator **Melanie Robson**  
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**Emergencies** For patients requiring same day consultations (e.g. spinal cord compression), please contact our Palliative Radiation Oncology referral coordinator (416.946.2901) who will identify the radiation oncologist that is best able to respond to your requests.

### After-Hour Requests

Please page the radiation oncologist on call through the switchboard at 416.946.2000.

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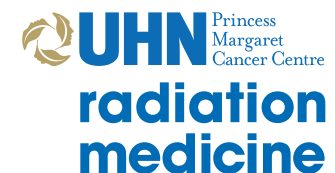
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