



IT'S YOUR HEALTH



Airport Full-Body Scanners

The Issue

Full-body scanners are now being used in various airports around the world. Concerns have been raised with regard to whether or not these devices pose any health risk to airline passengers, who are scanned at security checkpoints.

Background

Full-body scanners are devices used in some airports to ensure that passengers are not carrying prohibited items aboard the aircraft. A passenger stands in front of the scanner with his/her arms extended over the head, with fingers touching. Security personnel review a digital image of the passenger and check for objects that are not permitted aboard the flight.

Types of Scanners

There are two types of full-body scanning systems: one uses millimetre-wave technology and the other uses x-ray technology.

The scanning systems currently used in Canada are millimetre-wave scanners, which do not emit x-rays. The millimetre-wave body scanner works by projecting low-level millimetre-wave, radio-frequency (RF) energy above and around the passenger's body. The RF energy is reflected back from the body and from objects concealed on the body to produce a three-dimensional image. Only a small portion of the RF energy transmitted by the device is absorbed within a thin layer (1 mm) of the body's surface.



Photos courtesy of L-3 Security and Detection Systems

X-ray scanners emit low levels of x-rays, which are a form of electromagnetic ionizing radiation. This type of scanner is not in use in Canadian airports.

Safety of Full-Body Scanners Used in Canada

The millimetre-wave scanners do not pose a risk to human health and safety. Health Canada has assessed the technical information on these devices and concluded that the radiofrequency energy emitted by the device is well within Canada's guidelines for safe human exposure.

The electromagnetic non-ionizing radiation used in these scanners is based on millimetre wave technology and does not pose a risk to human health and safety, from either single or repeated exposures.

Health Canada's Role

To protect the public from any possible health effects associated with exposure to radio-frequency (RF) electromagnetic energy, [Health Canada](#) developed a guideline, commonly known as [Safety Code 6](#), which sets safe human exposure limits .

The limits specified in this guideline were established after Health Canada scientists



reviewed the results of hundreds of studies over the past several decades on the biological effects of radiofrequency energy. Health Canada has set general public exposure limits at 50 times lower than the threshold for potentially adverse health effects.

Need More Info?

See the following Health Canada web sections:

- [Health Canada's Consumer and Clinical Radiation Protection Bureau](#) at:
www.hc-sc.gc.ca/ahc-asc/branch-dirgen/hecs-dgsesc/psp-ppsp/ccrpb-bpcrpcc-eng.php
- [Health Canada's RF exposure guidelines \(Safety Code 6\)](#) at:
www.hc-sc.gc.ca/ewh-semt/pubs/radiation/radio_guide-lignes_direct-eng.php

Also, see the following:

- Transport Canada release - [Government of Canada Invests in Full Body and Behaviour Screening to Further Enhance Security at Canadian Airports](#) at:
www.tc.gc.ca/eng/mediaroom/releases-2010-h002e-5794.htm
- Canadian Air Transport Security Authority's Pamphlet - [Full Body Scanner](#) at:
www.catsa-acsta.gc.ca/Page.aspx?ID=84&pname=Fullbodyscanner_scannercorporel&lang=en
- For additional articles on health and safety issues go to the [It's Your Health](#) web section at:
www.healthcanada.gc.ca/iyh

You can also call toll free at 1-866-225-0709 or TTY at 1-800-267-1245*