

## AAPM Addresses Concerns from Published Study on CT Risk

*Level of risk found in the study is the same as that estimated in previous work; medically necessary CT exams provide essential information.*



**ALEXANDRIA, VA, April 14, 2025** — Computed Tomography (CT) scans create detailed images of the body, providing much more information than an X-ray would. CT is an invaluable

tool used to diagnose and treat a wide range of diseases and injuries, and physicians depend on it in many medical scenarios, from diagnosing and treating cancer patients to determining whether surgeries are necessary.

A [paper published in JAMA Internal Medicine](#) suggests that if current radiation dosing and utilization practices continue, CT-associated cancers could eventually account for 5% of all new cancer diagnoses annually. However, the methods used by Smith-Bindman et al. are fundamentally statistical in nature with a large amount of uncertainty, said Cynthia McCollough, Ph.D., CT imaging expert and past president of AAPM.

“They provide no direct evidence of any person getting cancer from a CT scan,” McCollough said. “The authors’ estimates also assume that the risk from a CT scan is the same for a sick person getting a CT scan as it is for a healthy person getting a CT. Rather, any risk from a CT scan of a sick patient is likely much less than the risk of the underlying disease.”

CT scans expose patients to radiation, and so — as with any medical test — CT scans should be performed only when the information that may be gained could be beneficial to the patients’ care. However, there is also risk associated with not receiving a medical test like a CT scan: A [study](#) of almost 12,000 patients who had surgery to remove their appendix showed that 10% of the group who received only an ultrasound scan underwent unnecessary surgery due to an incorrect diagnosis. In the group of patients who received only CT scans, only 2.5% underwent unnecessary surgery; there is a 7.5% higher chance of an unnecessary abdominal surgery for patients who do not get a CT but get an ultrasound exam instead.

CT plays a huge role in diagnosing and treating cancer patients. Screening for lung cancer with CT imaging has increased survival rates, finding cancers at earlier, more treatable stages. In a [large national trial](#), there was a 20%

decrease in lung cancer deaths among smokers and ex-smokers who received low-dose CT scans of their lungs compared to those who had only a chest X-ray.

Physicians also depend on CT in other medical scenarios. [Prior work](#) has shown that in the emergency department, obtaining a CT exam changed the initial diagnosis in 20%-50% of patients. In a [study](#) of patients with abdominal pain, weight loss, or blood in their urine, a CT exam changed the doctor’s initial diagnosis in 50% of patients and changed clinical management in 35%-54% of patients.

“The level of risk the JAMA paper’s authors estimate is about the same as that estimated in previous work and hence the topic has not taken any dramatic new turn,” said M. Mahesh, Ph.D., current president of AAPM and a specialist in CT imaging. “Rather, advances in CT technology and radiation optimization have reduced the radiation dose of a CT scan by 20% between [2006 and 2016](#). Imaging professionals, including medical physicists, take great care to use only the amount of radiation needed to answer the clinical question, and patients should feel safe proceeding with a medically needed CT exam.”

AAPM recommends that patients with concerns about CT exams ask their doctors if the results of an ordered CT will help determine their diagnosis or treatment plan. If the answer is yes, it is safest to proceed with the CT exam. The benefits of the information the exam will provide far outweigh any risk in obtaining it.

For more information, visit <https://www.medicalradiationinfo.org>.

###

### [About the American Association of Physicists in Medicine \(AAPM\)](#)

AAPM is the premier organization in medical physics, a scientific and professional discipline that uses physics principles to address a wide range of biological and medical needs. The mission of AAPM is to advance medicine through excellence in the science, education, and professional practice of medical physics. Currently, AAPM represents over 9,000 medical physicists in over 96 countries.

Media Contact:

Glen Hawkins | [media.contact@aapm.org](mailto:media.contact@aapm.org) | 571.298.1354

P R E S S   R E L E A S E

