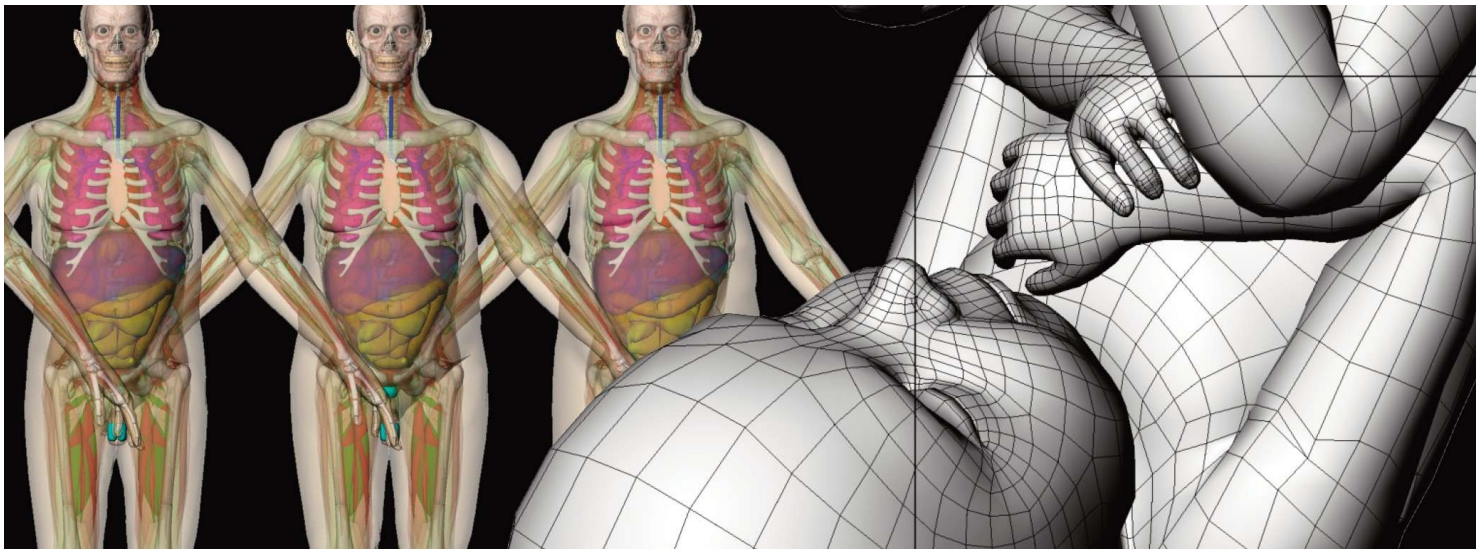
VirtualDose™
A product of Virtual Phantoms, Inc.

Monitor Medical Radiation Dose - Increase Patient Safety



VirtualDose™ fulfils the need for accurate radiation dose tracking and reporting by providing anatomically correct 3D patient modeling.

VirtualDose is a radiation dose tracking and reporting software tool for radiologists, radiological technologists, medical physicists, regulators, manufacturers and researchers who are interested in tracking and managing medical radiation dose. Thanks to the use of a family of 3D anatomically correct patient models, revolutionary GPU-based Monte Carlo simulation, and innovative "Software as a Service" design, VirtualDose permits users to obtain accurate patient-based dosimetry information to greatly improve patient safety. The VirtualDose family now features products for Computed Tomography and Interventional Radiology.

Most Advanced Computational Phantoms

The heart of the VirtualDose system is our family of phantoms: thoroughly-tested, anatomically accurate 3D models of virtual patients. We use third-generation mesh and NURBS-based deformable patient models, including **adults** of various body sizes, **overweight and obese** adults, **children** from newborn through adolescent, and **pregnant** patients at three gestational stages, to provide accurate radiation dose to a diverse patient population.

Easy to Use, Web-Based

Our easy-to-use radiation dosimetry tool is accessed via the Web. There is no software to install or maintain locally. This way, you are always accessing the most up-to-date version of the software tools. The VirtualDose system can also be accessed using an easy-to-configure API permitting batch processing and integration with local patient databases. In addition, VirtualDose powers the organ dose functionality of several commercial dose monitoring systems world-wide.

Researched and Respected

VirtualDose is the product of many years of research by a globally renowned team of faculty members from Rensselaer Polytechnic Institute (RPI), in collaboration with researchers from the University of Florida (UF). Led by nuclear engineering professor Dr. George Xu, a fellow of the American Association of Medical Physicists, American Nuclear Society, and Health Physics Society, the team founded Virtual Phantoms, Inc. in 2009 and launched an NIH-sponsored commercialization project. VirtualDoseCT became commercially available in 2014, and has quickly become the leading CT organ-dose solution on the market. In 2017, VirtualDoseIR was launched as a dedicated tool for interventional radiology, and in 2025, VirtualDoseDX followed as a specialized solution for diagnostic X-ray imaging.

VirtualDose delivers:

One of the world's largest library of patient phantoms

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Monte Carlo based organ dose data for each patient

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An intuitive, easy-to-use graphical user interface design

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A Web-based solution for easy access and software upgrades

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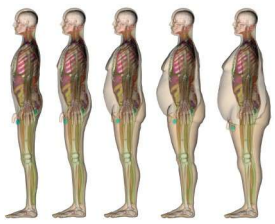
Dose calculation modules for CT and IR procedures



VirtualDose™ CT

Pre-defined standard and custom scan ranges

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Selectable kVp, collimation, bowtie filter, and overscan

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Simulated CT images for better localization

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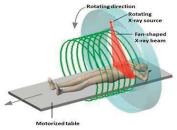
Dose to all critical organs and effective dose following ICRP 60 and 103



VirtualDose™ IR

Selectable field size, kVp, filtration, position, and direction

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Output defined by DAP or air kerma rate and time

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Visualization of the IR field on the phantom

VirtualDose™ DX

Wide Exam Coverage — chest, abdomen, spine, extremities and more

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Customizable Parameters — adjust x-ray output, orientation/geometry to match site specifics techniques or patient protocols

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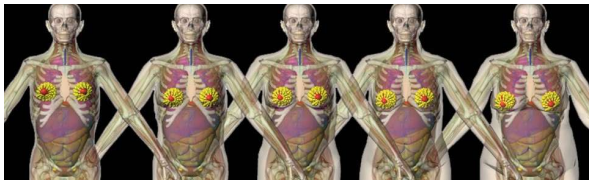
Flexible Output Units — EAK , EAK , KAP, and mAs to mirror machine outputs

CT – Addressing a Growing Problem

Although CT imaging has been proven extremely effective as a diagnostic tool, repeated exposure to ionizing radiation is known to associate with a potential risk of adverse effects. In light of rapidly increasing use of CT scanners in recent years, national and international organizations have issued guidance regarding the tracking and management of CT radiation dose, and in the US, several states have passed laws requiring hospitals to record the CT radiation dose for patients. The Image Wisely and Image Gently campaigns, from the American Board of Radiology (ABR), promote the optimization of radiation dose and image quality. This trend toward increasing regulation in CT exposure is expected to accelerate in the future. Tools such as VirtualDoseCT are essential in the management of CT dose.

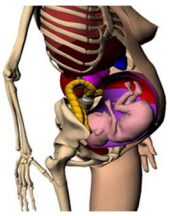


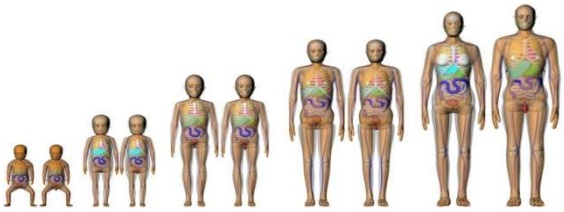
IR – New Tools for Interventional Procedures

In recent years, interventional radiology (IR) procedures have expanded beyond the traditional cardiovascular applications to many other specialty areas, and so their overall use has increased significantly, today contributing more than 14% of all medical radiation dose in the US. Long exposure times can subject patients to acute injuries to the skin and other tissues, but the large accumulated doses pose a long-term radiation risk that can be monitored and managed. With continued growth, it is likely that regulatory attention will turn to IR in the future. VirtualDoseIR provides an important tool to understanding and managing IR dose.

DX – Accurate radiation dose information for radiographic studies

VirtualDoseDX performs science grade dose modeling for Diagonstic X-ray (DX) radiographic exams. It enables clinicians, physicists, and researchers to obtain organ level and effective dose estimates, adjust techniques to match local protocols, and generate clear reports for QA, patient communication, and research.





CONTACT US TODAY

518.288.8048

info@virtualphantoms.com

Find out more about our research, our history, and the Virtual Phantoms family at www.virtualphantoms.com

VIRTUAL PHANTOMS, INC.

1425 Central Ave, P.O. Box 5681, Albany, New York 12205-5681

www.virtualphantoms.com