



Missouri Radiation Control Program Guidance Document/Frequently Asked Question

See below for regulatory guidance on the following issue. If you have additional questions, you may contact the Missouri Radiation Control Program at MRCP@health.mo.gov or 573-751-6083

Is a physician's order necessary for an x-ray? (Includes DEXA for body composition analysis) (Last revised Aug 2015)

As has long been interpreted by the Missouri Radiation Control Program under the provisions of the Radiation Control Law, if a medical x-ray machine is used on a human, it must be done for legitimate healing arts purposes (diagnosis or treatment of injury or disease) to be in compliance with Missouri state law. Medical radiation machines that are not used for legitimate healing arts purposes inherently expose both the operator and patient to **unnecessary radiation**, which is prohibited by 192.430, RSMo. Part of legitimate healing arts usage includes active physician involvement and oversight. This can include (most common) a physician order (either verbal or written) for each exam or treatment, or an ongoing approved screening program or medical research with protocols developed and approved by an institutional review board with physician involvement. Examples of this might be the breast cancer screening guidelines developed by the American Cancer Society, which cover screening mammography, which in some cases can be done without a referring physician (although the image is still interpreted by a properly trained and certified physician) as approved by the Food and Drug Administration under the Mammography Quality Standards Act.

But for most individual exposures with a medical x-ray machine, the expectation is that there is a legitimate medical purpose, which can only be decided and requested by a licensed practitioner within their scope of practice.

This interpretation is applied through the following Missouri laws:

*All sources of radiation shall be shielded, transported, handled, **used** and kept so as to prevent all users thereof and all persons within effective range of them from being exposed to unnecessary radiation. 192.430, RSMo.*

It is unlawful for any person to produce radiation, or produce, use, store or dispose of radioactive materials or radiation machines, or to modify, extend or alter these activities unless he registers in writing with the department of health and senior services in accordance with the procedures prescribed by the department, except that the department may exempt from registration certain classes of radiation machines or radioactive materials known to be without hazard. 192.440(1), RSMo.

*It is unlawful for any person to produce radiation, or to produce, **use**, store or dispose of radioactive materials or radiation machines except in accordance with sections 192.400 to 192.490 and the rules and regulations adopted pursuant to these sections. 192.440(2), RSMo.*

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Medical x-ray use permitted only under physician supervision and order is also consistent with other commonly-accepted national and international standards:

“Radiologic services must be provided only on the order of practitioners with clinical privileges or, consistent with State law, of other practitioners authorized by the [hospital] to order the services.”
Medicare Certification Standards for hospitals: §482.26(b)(4)

“[Facilities utilizing diagnostic x-ray equipment must] ensure that no patient is exposed to radiation for diagnostic purposes unless the procedure is prescribed by a medical practitioner who fulfills... requirements on training and experience for prescribing procedures involving medical [radiation] exposure.” ***Radiological Protection for Medical Exposure to Ionizing Radiation***, International Atomic Energy Agency Guide RS-G-1.5

“Individuals shall not be exposed to the useful [x-ray] beam except for healing arts purposes and unless such exposure has been authorized by a licensed practitioner of the healing arts. This provision specifically prohibits deliberate exposure for the following purposes:

- (1) Exposure of an individual for training, demonstration, or other non-healing arts purposes; and
- (2) Exposure of an individual for the purpose of healing arts screening except as authorized by the Agency. ***Conference of Radiation Control Program Directors Suggested State Rules***

Uses of Medical X-ray Machines that Are NOT Permitted:

- Use of human beings to test, demonstrate, or refine the performance of x-ray machines (human “phantoms”)
- Use of “health fairs” or retail pharmacies using DEXA (bone density testing) units for informal assessment without physician order.
- Use of gyms, personal trainers, or athletic departments wishing to use DEXA units for body composition analysis (unless there is active physician involvement and oversight, and an order for services.)
- Research on humans, except for the purposes of properly approved research in an Institutional Review Board approved study.

Note: Some security scanners that utilized backscatter x-ray technology, which were in common usage at some airports in years past are not medical x-ray machines, and are under the authority of the federal Transportation Security Administration. Those units have since been removed from airports in 2013.