

Short Note on Interventional Radiology and Ergonomics

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DESCRIPTION

In the field of interventional radiology, research related to ergonomic is still insufficient, and very limited literature is available on this specific field using ergonomics. The usage of lead garments and a lack of awareness of ergonomic principles have been linked to an increased risk of work-related musculoskeletal diseases among operators, according to the literature. Musculoskeletal problems may lead to physician burnout, according to existing surgical research, and female operators are more likely to develop musculoskeletal illnesses. Interventional radiology is a rapidly expanding profession that overlaps with a variety of different fields such as cardiology, vascular surgery, orthopaedic surgery, urology, and minimally invasive surgery. Intraoperative viewing displays and personal radiation protection devices are two unique ergonomic factors for interventional radiology. Work-related injuries are common in interventional radiologists, resulting in pain while performing operations or during time away from work.

There hasn't been much research done on ergonomics in interventional radiology. Interventional radiologists, like any other operators, are susceptible to work-related musculoskeletal diseases. The usage of lead shielding to protect against radiation exposure, as well as the lack of ergonomic principles identified thus far, contribute to these problems, which may have an impact on their livelihoods, quality of life, and overall health.

Interventional radiologists are experts in minimally invasive procedures that use ultrasound, computed tomography, and fluoroscopic guidance. Aside from the inherent risks of surgery and the operating room setting, such as injuries from sharp instruments, interventionalists must also deal with specialised and complex angiographic suites. The routine use of imaging guidance puts the interventionalist at risk for ergonomic strain and specific workplace injuries. Recurrent radiation exposure is the most visible and well-studied risk to the interventionalist population. Radiation time minimization, distance, and shielding are time-tested interventional radiology adages. This type of universal education and recognition, however, has not been developed for interventional ergonomics.

The development of remote manipulators using robotics is a promising solution to ergonomic issues caused by protective garments. Surgical robots are already being used in other surgical specialities, such as urology. The advancement of robotics can improve procedure accuracy while limiting radiation exposure to personnel [1]. This could open up new avenues for IRs in terms of ergonomics, similar to what has already been observed in surgery [2]. The hybrid operating room, a new generation of robotic cone-beam computed tomography system, helps limit radiation exposure and improve user experience and workflow efficiency, even in complex working positions at the patient's head, neck, or left side, while increasing the adoption of advanced image guidance in daily practise [3].

Another intriguing option is the use of head-mounted displays. The computer tomography scanned and X-ray images are projected for the physician in such a system, preventing ergonomic injury. Interventional radiology is a rewarding field to work in. Maintaining proper ergonomic strategies will enable you to have a long, healthy, and productive career.

Musculoskeletal disorders are common and have a significant impact on interventional radiologist practise, necessitating increased awareness and prevention. Improvements in interventional radiology ergonomics have the potential to alleviate these symptoms, boost productivity and performance, reduce sick leave, extend careers, and, ultimately, improve patient care. Ergonomics training programmes are now required, as is an evolution in the design of medical devices and interventional suites.

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