

Enhance Patient Engagement While Optimizing Sonographer Comfort

The Canon Aplio i-series, Healthy Sonographer Platform

Canon Medical Systems USA Sound Ergonomics, LLC

Patient satisfaction is a key component of a good health care business model.¹ The patient's comfort and confidence are paramount when interacting with a health care provider. Due to growing patient volume, increasing patient size, and expanding exam protocols, sonographers often find themselves more focused on the study than the patients.

Compounding this lack of engagement is the fact sonographers often work in painful static postures for extended periods of time, which increases their incidence of injury, resulting in work-related musculoskeletal disorders (WRMSDs). Surveys have indicated that 90 percent of sonographers report some type of injury that they attributed to their work.²

The causes of these injuries are multifaceted and therefore a spectrum of solutions is required to reduce the risk of further injury. To address these risks, it is critically important to enable sonographers to achieve a neutral work posture, which is better facilitated by ultrasound systems that are designed with sonographer ergonomics in mind and include flexible and adjustable features.

To address the issue of sonographers scanning in pain, the new Aplio i-series systems, The Healthy Sonographer Platform, from Canon Medical Systems have been designed with adaptive ergonomics. Even with different exam types, the sonographers can achieve a comfortable scanning position while easily and continually engaging with the patient.

This paper will explore the most effective positions for sonographers, how ultrasound systems can be optimized to help improve sonographer comfort and patient engagement, and how Canon Medical Systems supports both sonographer health and health care facilities.

Defining the most effective sonographer positions

Sonographer neutral position

While the relationship of the sonographer to the system is fixed, resulting in static postures, it is important for the sonographer to sit or stand in a neutral position. This **"sonographer neutral position"** starts with a straight, comfortable body core – sitting or standing without neck or trunk twist and shoulders square to the system's monitor. From this position, arm reach, abduction and trunk bending – common causes of pain and injury – can be reduced.



In a poor work posture, the sonographer is disengaged from his patient.

Patient engagement position

While performing the exam with system components properly positioned, the sonographer is also able to better communicate with patients, thus making them feel like a part of the exam process. This **"patient engagement position"** enables the sonographer to stay connected with the patient throughout the exam, easing requests for patients to reposition, hold their breath or hold still. Better engagement with the patient during the exam¹ has been linked to improved study quality through a reduction in patient movement, which also increases throughput and encourages better follow-up.



The system monitor and user interface are aligned with the sonographer's body, optimizing scanning comfort and patient engagement.



Moving the monitor toward the patient and the user interface away from the bed allows patient engagement and sonographer comfort to come together.

Optimizing the ultrasound system's position: the key to improving sonographer comfort and patient engagement

Creating the Magic Triangle

At the beginning of an exam, if the system is adjusted to align with the sonographer, then comfort and patient engagement are more likely to be achieved and maintained throughout the study, reducing musculoskeletal stress from extended twisting and reaching. The position that makes this possible is called the Magic Triangle.

The Magic Triangle is created by first moving the monitor toward the patient and then swiveling the control panel away from the exam table. The nonscanning hand and wrist settle into a neutral position, eliminating twist in the wrist, trunk and neck.

Use of a second console

Some exams, such as providing guidance for interventional procedures, naturally put sonographers into awkward and uncomfortable positions. Since the physician needs to view the system's monitor, the sonographer may be forced to twist and lean over in order to also see the monitor.



Conventional sonographer position during lower extremity venous exam

Sonographer in neutral position using remote second console during lower extremity venous exam, reducing twist and reach

The addition of a remote second console, enabling system control and live viewing of the ultrasound image, can remove the need for awkward postures during these common procedures. The remote second console is also very useful when performing exams that otherwise would require extensive repositioning of the ultrasound system, such as carotid artery exams performed from the head of the table. Another example is a bilateral lower extremity exam. In this exam, the sonographer scans down the lower extremity while twisting to view the monitor and reaching to access the control panel. The remote second console can be positioned across from the sonographer in line with his or her view and reach.

A system designed for patient care and sonographer comfort

The Aplio i-series systems by Canon Medical Systems, The Healthy Sonographer Platform, are designed from the ground up with adaptive ergonomics to conform to the sonographer, patient, and exam. The i-series ultrasound systems also **meet or exceed 34 of 35 industry standards set for console-based floorstanding models for the prevention of work-related musculoskeletal disorders.**³

As part of the commitment to sonographer health, Canon Medical has pioneered the Healthy Sonographer Program. This effort is intended to help not only sonographers but also health care facilities, which benefit from experienced workers who are comfortable and following best practices to reduce their risk of occupational injury. These facilities also benefit when patients have a good experience and are more likely to return to the same facility for their care.¹ The Healthy Sonographer Program has been brought to life in several ways:

• In addition to creating the Aplio i-series systems' adaptive ergonomics, Canon Medical has developed Healthy Sonographer continuing education seminars that are hosted across the country at sonographer society meetings, at national association meetings, and in hospital radiology and cardiology departments.

• Canon Medical's ultrasound applications team has also been Healthy Sonographer Certified, an industry exclusive.

• At the SDMS meeting in 2018, Canon Medical launched **HealthySonographer.com**. The multimedia website is the premier destination for sonographers, physicians, managers and executives to learn about the issues of sonographer injury. In addition to featuring statistics, popular articles and other useful resources, the website hosts videos of ergonomics experts teaching sonographers how to optimize their work environments to help reduce stress. In addition to videos, sonographer-specific stretches are recommended by a physical therapist.

To arrange for an Ergonomics for the Healthy Sonographer CME talk in your facility, speak with a Canon Medical Imaging professional or visit HealthySonographer.com today to submit a request.



The Aplio i-series systems, The Healthy Sonographer Platform, have adaptive ergonomics allowing the system to conform to the patient, user and exam in different scanning environments.

References

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- 3. The Industry Standards for the Prevention of Work Related Musculoskeletal Disorders (WRMSDs) in Sonography is the work product of a 2016 Consensus Conference on Work Related Musculoskeletal Disorders involving 26 sonographyrelated professional organizations, accreditation bodies, and manufacturers. https://www.sdms.org/docs/default-source/ Resources/industry-standards-for-the-prevention-of-workrelated-musculoskeletal-disorders-in-sonography.pdf, Aplio i-series https://us.medical.canon/products/ultrasound/aplio-iseries/HealthySonographer.com



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