

# Compression Assist Device for Ultrasonography

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## Technology description

### Introduction

Sonographers frequently suffer from work-related repetitive stress injuries associated with the motions required to complete an ultrasound examination. Repetitive downward pressure with an outstretched arm can lead to a number of injuries including carpal tunnel syndrome, tenosynovitis, shoulder bursitis, rotator cuff tears, and degenerative disc disease. These injuries impact the short- and long-term productivity of sonographers, and also negatively affect employers in the form of revenue loss, medical bills, worker's compensation claims, and new staff recruitment. Current injury prevention methods, such as adjustable or ergonomic chairs and cushions for elbow support, are palliative measures that do not greatly reduce the work-related injuries that sonographers experience. Therefore, a device that provides active compression and directional assistance to sonographers may greatly reduce repetitive stress injuries and cut the costs related to these injuries.

### Technology Description

Dr. Jonathan Frankel has designed a compression and direction assist device that can be adapted for commercially available ultrasound systems. He has developed two designs for this device: (1) a semioval arc that attaches to a patient gurney and (2) a positioning arm that can be mounted on the floor or ceiling. Both embodiments have a compartment that houses the ultrasound transducer, allow the sonographer to easily move the transducer to any position over the patient's body and lock it in place, and apply compression with a foot pedal or push button.

The described invention can also be incorporated into a real-time robotic telesonography system that allows a remote ultrasound technician or radiologist to perform ultrasound procedures and provide direction and/or image analysis.

## Application area

- Compression and directional assistance for ultrasound sonographers
- Remote sonography

## Advantages

- Hands-free
- Ergonomic
- Reduces work-related injuries and associated costs

## Institution

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