

# Software-Automated Medical Imaging Software for Standardizing the Diagnosis of Sarcopenia

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## BACKGROUND

**Sarcopenia** is defined as an age associated decline in or loss of lean **skeletal muscle** mass. The pathophysiology can be multifactorial and the change in body composition may be difficult to detect due to obesity, changes in fat mass, or edema. Changes in weight, limb or waist circumference are not reliable indicators of muscle mass changes. Sarcopenia may also cause reduced strength, functional decline and increased risk of falling. Sarcopenia is otherwise asymptomatic and is often unrecognized.

## TECHNOLOGY DESCRIPTION

Researchers from UC San Diego have developed a technology to quantify muscle quantity and quality that is also able to distinguish between healthy and older patients with chronic disease at risk for sarcopenia. The technology automatically selects and measures a patient's muscle quantity and quality on MRI & CT scans (full body, chest, abdomen, pelvis) using a system of convolutional neural networks (CNNs). This technology combines common convolutional neural networks to solve the unsolved clinical problem of standardizing diagnostics in evaluating Sarcopenia.

## APPLICATIONS

The software leverages convolutional neural networks (CNNs) to:

- ▶ select an axial location and
- ▶ to segment the muscle of interest on MRI and CT scans covering variable areas of the body (full body, chest, abdomen, pelvis).

## ADVANTAGES

This invention combines common convolutional neural networks to solve the unsolved clinical problem of standardizing diagnostics in evaluating Sarcopenia.

## STATE OF DEVELOPMENT

Clinical Evaluation Stage

## INTELLECTUAL PROPERTY INFO

UC San Diego is seeking partners to commercialize this muscle quantification software code and help standardize diagnostics in evaluating Sarcopenia.

## CONTACT

University of California, San Diego  
Office of Innovation and Commercialization  
[innovation@ucsd.edu](mailto:innovation@ucsd.edu)  
tel: 858.534.5815.



## OTHER INFORMATION

### KEYWORDS

diagnostics, sarcopenia, cancer,  
COPD, medical imaging

### CATEGORIZED AS

- ▶ **Imaging**
  - ▶ Medical
  - ▶ Software
- ▶ **Medical**
  - ▶ Disease: Musculoskeletal Disorders
  - ▶ Imaging

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