**Development of a compression device for chronic lower limb edema management, specialized for people of advanced age with low activity levels**

Background

Japan is one of the world’s most rapidly aging societies, with many frail people of advanced age. Previous studies have shown decreased activity levels and an increased prevalence of lower limb edema among older people. Causes include loss of activity and muscle mass, malnutrition, circulatory dysfunction, and motor dysfunction.

Compression therapy is effective for stagnant edema. However, the optimal pressure in the lower limbs of older individuals is unclear, considering the effects on the hemodynamics of older people. Furthermore, edema in this population is overlooked as an aging-associated physiological change and is not properly managed.

We will determine the compression range of older individuals’ lower limbs and manufacture a compression device that adapts to the clinical site.

Purpose

Generation of requirements for creating a leg compression device prototype

Consideration of the physique of Japanese older people, particularly thigh size

Estimation of leg pressure

Evaluation of the use of existing compression devices (older patients, family, medical staff)

Production of leg compression device prototype

Production of device by cooperation with nursing sciences, biotechnology, and sewing companies

Clinical evaluation of manufactured device

Evaluation of lower limb edema, daily life, and quality of life from viewpoints of nursing science and cardiovascular science