

# Spinal cord injury, serum cystatin C and lean body mass – is there a correlation?

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## Background:

Complication to spinal cord injury (SCI) is loss of bladder control with increased risk of kidney failure and transformation of muscle tissue to fatty tissue.

Renal function is measured by glomerular filtration rate (GFR). Serum cystatin C is used as an endogenous marker of GFR in SCI.

Serum cystatin C is not correlated to lean muscle mass in healthy subjects. To our knowledge this has not been studied in SCI patients. DEXA-scanning is a simple tool to measure lean body mass and fat mass.

## Aim:

To investigate if there is a correlation between serum cystatin C and lean body mass in people with a traumatic SCI within a year after SCI.

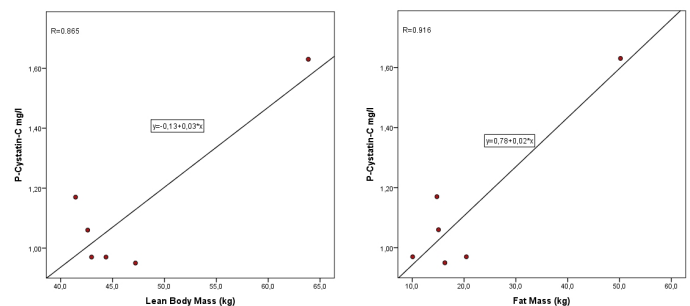
## Population characteristics:

<b>Gender</b>	
Female (N)	3
Male (N)	4
<b>Level and completeness</b>	
Tetraplegia complete (N)	2
Tetraplegia incomplete (N)	2
Paraplegia complete (N)	2
Paraplegia incomplete (N)	1
<b>Age at time of examination, years (mean ± SD)</b>	58.4 (± 14.5)
<b>Time since injury, days (mean ± SD)</b>	83.4 (± 43.5)
<b>Cystatin C mg/ml (mean ± SD)</b>	1.19 (± 0.29)
<b>Lean Body Mass kg (mean ± SD)</b>	49.8 (± 10.6)
<b>Fat Mass kg (mean ± SD)</b>	21.3 (± 13.6)

## Methods:

Serum cystatin C levels were measured by an automated particle-enhanced nephelometric immunoassay, <sup>51</sup>Cr-EDTA clearance (GFR) by a multiple plasma sample method and DEXA-scanning were performed. Linear correlation analyses were used to analyse relationships between lean body mass, fat mass and serum cystatin C.

## Results:



## Discussion:

The linear correlation analyses in this study showed a slight correlation between both lean body mass, fat mass and serum cystatin C. In healthy able-bodied young men, a correlation has been found between fat mass but not lean body mass and serum cystatin C.

Serum cystatin C is used as a marker of GFR in SCI patients. It is important to have a simple, reliable and cost-effective test of renal function in SCI patients.

Due to the small number of patients further studies are needed in order to verify the results.