# Seasonality of hypercalcemia

## - A population-based study on Funen sarcoidosis patients

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## Introduction

Sarcoidosis-associated hypercalcemia presents in 5-10% of sarcoidosis patients.

Pulmonary alveolar macrophages express 1-alpha-hydroxylase, the enzyme responsible for the conversion of excess active vitamin D.

Previous research indicates seasonal variation in the incidence of sarcoidosis and the vitamin D concentration.

This study aimed to investigate potential seasonal variation in hypercalcemia in sarcoidosis patients living on Funen (Denmark).

## Method

Funen laboratory cohort (FLaC) consists of all residents on Funen who had a creatinine measurement performed between January 2000 and December 2015.

The study period was dependent on the sun data acquired from Danish Meteorological Institute and was consequently from 2004-2015.

Hypercalcemia was classified as a calcium measurement above 1,32 mmol/L within one year of diagnosis.

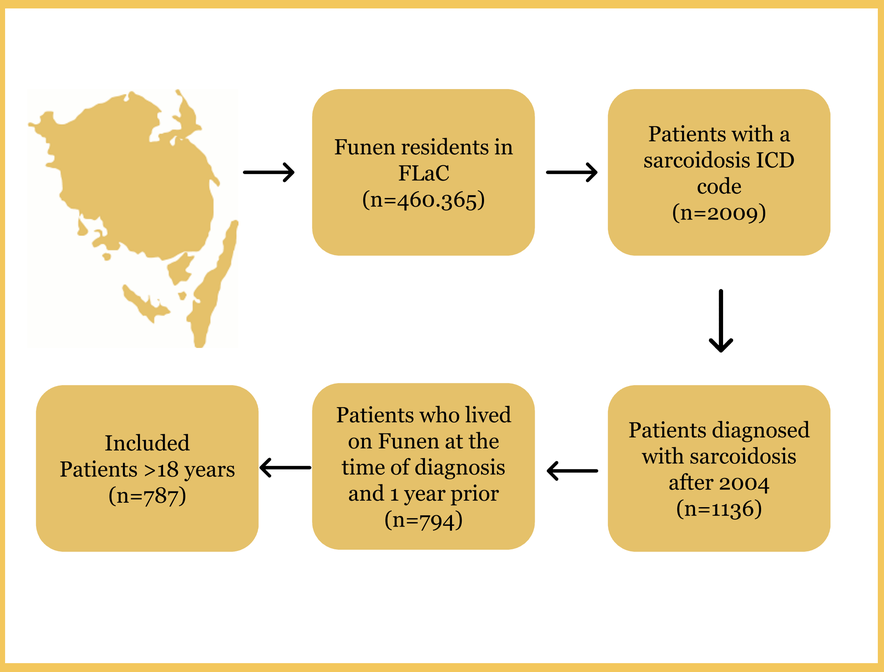


Fig. 1: Flowchart of patient identification

## Results

n=787
Sarcoidosis patients included

n=125 (15,9%)
Sarcoidosis patients with hypercalcemia (cases)

1:1
Male:female ratio

54 (41-63 years)
Median age

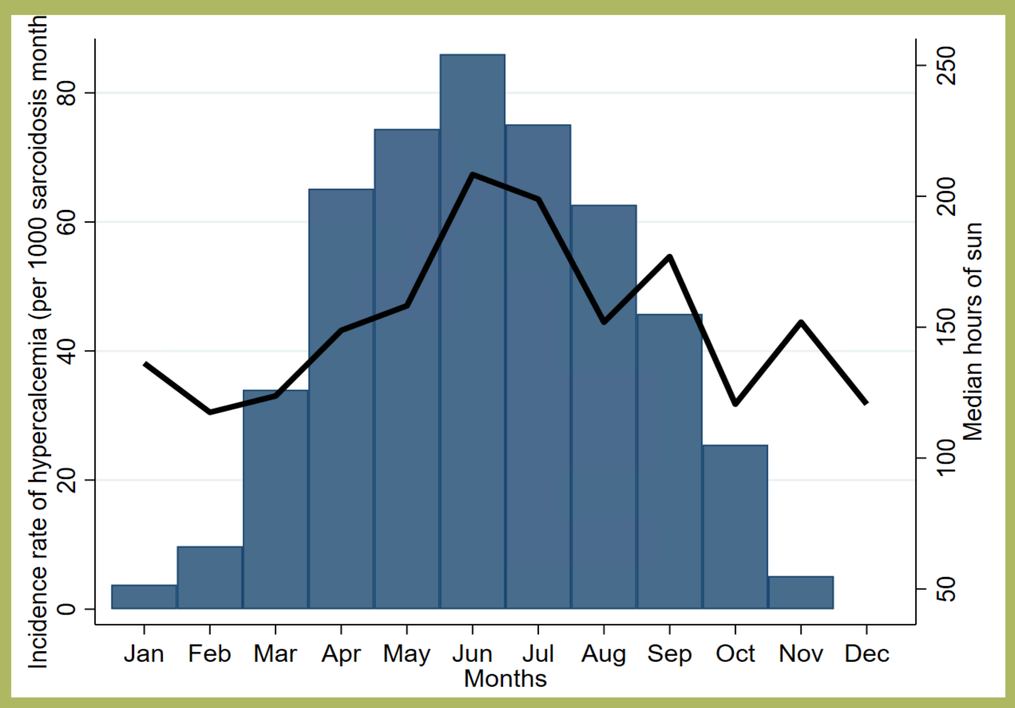


Fig. 2: Incidence of hypercalcemia related to the median number of sun hours per month in Odense Municipality from 2004-2015

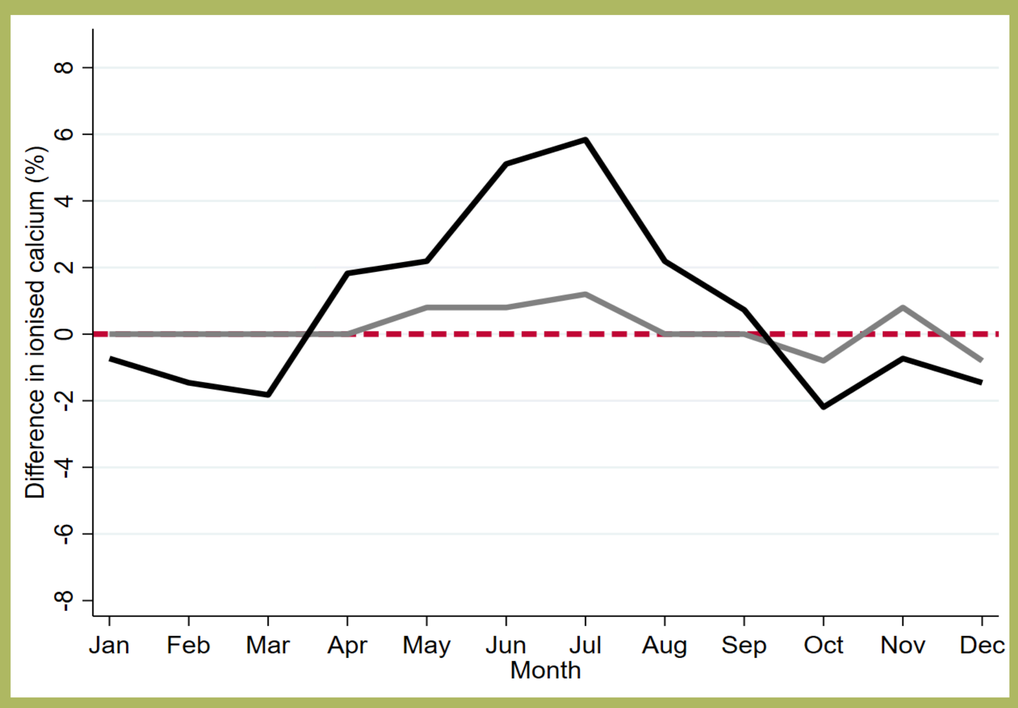


Fig. 3: The absolute difference in percent (%) per month in ionised calcium. Black represents calcium concentration in cases and grey represents the rest of the cohort.

## Conclusion

Hypercalcemia among Funen sarcoidosis patients clearly indicates a seasonal distribution with a peak from April to September. The physician should inform sarcoidosis patients at risk on this issue, in order to take their precautions to prevent development of potential symptomatic hypercalcemia.