

# A Comparative Cohort Study of Seizures in Greenlandic and Danish Children

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## Background

Only little research on epilepsy in Greenlandic children exists, with inconsistent results. The aim of this study was to identify the incidence of seizures in both Greenland and Denmark for comparison.

## Methods

A register-based cohort study of all children in Greenland and Denmark aged 0-15 in the period from 1987 through 2011 was conducted. Using the Greenlandic (GLPR) and the Danish National Patient Register, cases were identified and coupled to demographics through the Civil Registration System. Incidence rates (IR) per 100,000 person years (pyrs) and incidence rate ratios (IRR) for comparison were calculated.

## Results

The study showed an epilepsy IR of 204.0/100,000pyrs (189.9-219.2) in Greenland and 170.5/100,000pyrs (168.9-172.1) in Denmark. Moreover, Greenlanders in Denmark had a higher IR of epilepsy than Greenlanders in Greenland, with an IRR of 1.53. For febrile seizures, the IR was 175.5/100,000pyrs (162.4-189.6) in Greenland and 263.3/100,000pyrs (261.4-265.3) in Denmark. However, the IRR for Greenlanders in Denmark compared with Greenlanders in Greenland was 1.60. The IRR of febrile seizures for children living in settlements compared with Nuuk was 0.40/100,000pyrs (0.29-0.55). The risk of epilepsy subsequent to a diagnosis of febrile seizures was doubled in Greenland compared with Denmark.

## Discussion

The results pointed towards under-reporting of epilepsy in Greenland, and ethnicity was found a likely risk-factor. Furthermore, febrile seizures must be under-reported in settlements in Greenland. Additionally, the higher IR of epilepsy in Greenland compared with Denmark might be due to genetics, perinatal factors, CNS infections etc. However, further investigation and validation of GLPR concerning seizure diagnoses is needed.