



# Incidence of multiple sclerosis in Danish women has duplicated over the last sixty years

Melinda Magyari<sup>1,2</sup>, Nils Koch-Henriksen<sup>1,3</sup>

(1) The Danish Multiple Sclerosis Center, Department of Neurology, Rigshospitalet, University of Copenhagen, (Copenhagen, DK); (2) The Danish Multiple Sclerosis Registry, Rigshospitalet, University of Copenhagen, (Copenhagen, DK); (3) Department of Clinical Epidemiology, Clinical Institute, University of Aarhus (Aarhus, DK);

## Introduction

Incidence of multiple sclerosis (MS) has increased in the western world over several decades probably caused by increasing exposure to risk factors.

Using the Danish MS Registry with its more than 60 years history we analysed the trend of incidens in MS patients over the last six decades.

## Methods

The nationwide Danish MS Registry has collected data on virtually all MS patients in Denmark with onset from 1948.

Since 1950 data on virtually all patients with onset of MS in Denmark have been recorded in the Danish MS Registry, which has been notified by all Danish departments of Neurology, MS clinics, and MS rehabilitation hospitals.

This has enabled monitoring of MS incidence in Denmark over six decades.

## Results

We have registered 19,378 cases with clinical onset of confirmed MS from 1950 to 2009.

The crude annualized incidence rates of clinical onset of MS per 100,000 population were throughout the whole period:

Both sexes **5.88** (95% CI; 5.79-5.97)

For men **4.35** (95% CI; 4.24-4.47)

For women **7.37** (95% CI; 7.22-7.51)

The Incidence increased from the 1950-1959- to the 2000-2009-onset period:

**In women** there was an **103%** increase in incidence From **5.95** (95% CI: 5.63-6.28) to **12.12** (95% CI: 11.70-12.55).

**In men** the incidence increased only by **24%** From **4.49** (95% CI: 4.21-4.78) to **5.58** (95% CI: 5.30-5.87).

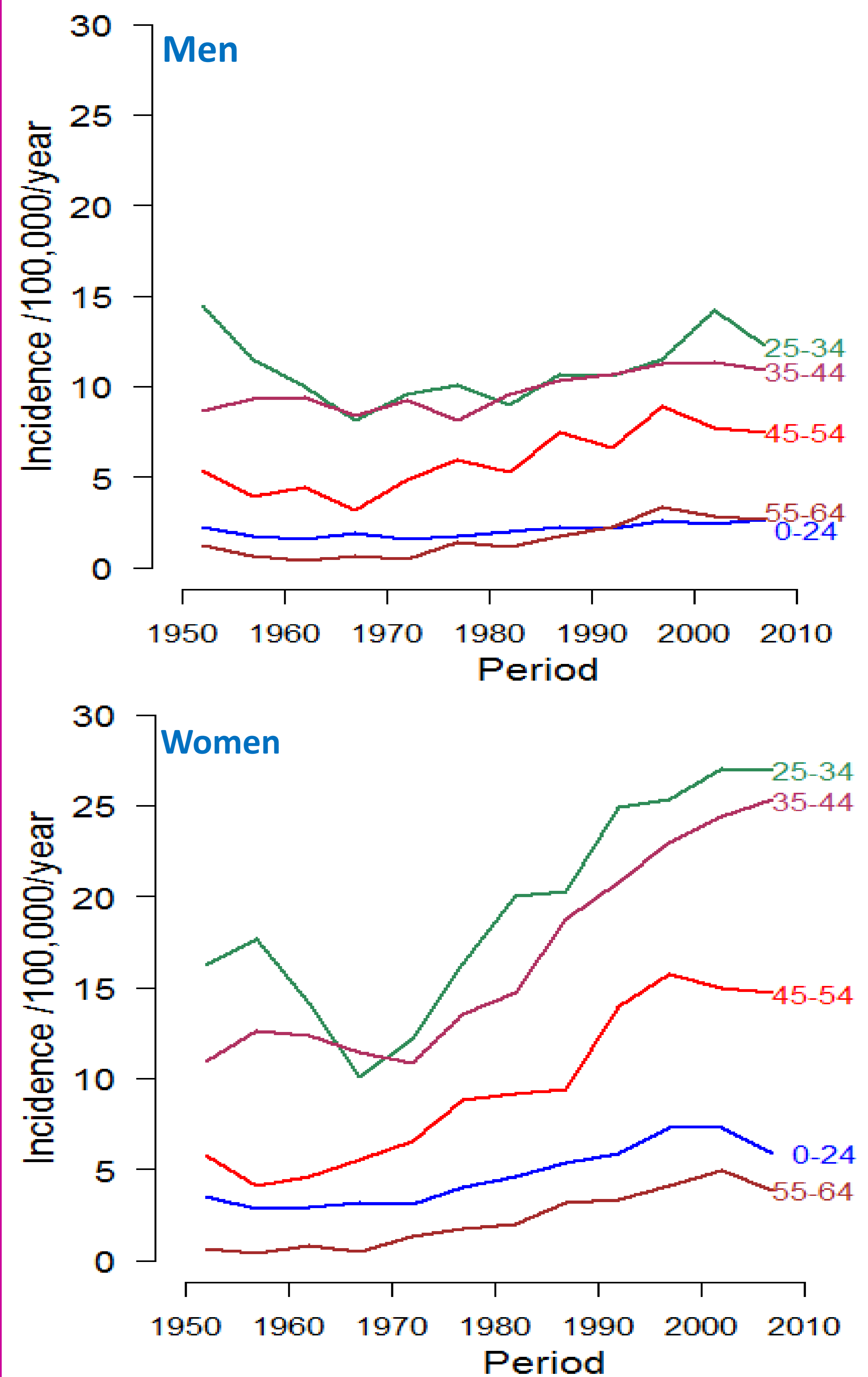
Accordingly, the **F:M sex ratio** increased from 1.32 to 2.08.

Based on the 2000-2009-onset period, we estimated that the population cumulative lifetime risk of acquiring MS was **0.87%** in women and **0.40%** in men, provided survival until onset.

## (cont.)

The increase in incidence was not equal for all age-at-onset groups. For women, the percentage increase was largest in the high age-at-onset group: 55-64 years (Figure 1).

Figure 1. Change of Incidence through six decades for different age at onset groups in men and women



## Conclusion

The incidence of MS has more than doubled in women and only modestly increased in men over the last 60 years. The low increase of MS incidence in men indicates that better case ascertainment cannot account for the marked increase in women.

Lifestyle changes in women like fewer childbirths, increased occurrence of obesity, and increased cigarette consumption may be the culprits.

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