

# Time trends of in-situ breast cancer incidence in Zurich

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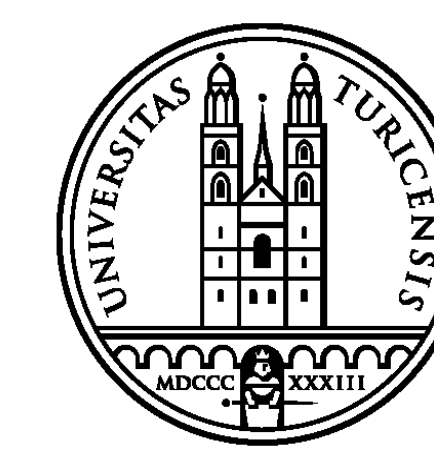
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## Background

- ❖ In-situ breast cancer (BCIS) is an intraepithelial lesion with abnormal cell proliferation that can develop into invasive cancer.
- ❖ Two subtypes are distinguished, ductal carcinoma in-situ (DCIS), and lobular carcinoma in-situ (LCIS).
- ❖ A rapid increase in BCIS incidence has been reported in the USA and in Europe over the past decades.

## Methods

- ❖ Study population: 989 women with an incident BCIS diagnosis between 2003 and 2014
- ❖ Age-standardized incidence rates per 100,000 person-years (ASR) were calculated.
- ❖ Age was stratified into five groups (< 40, 40-49, 50-59, 60-69 and ≥ 70 years).
- ❖ Joinpoint regression analysis was used to assess time trends of ASR.

## Results

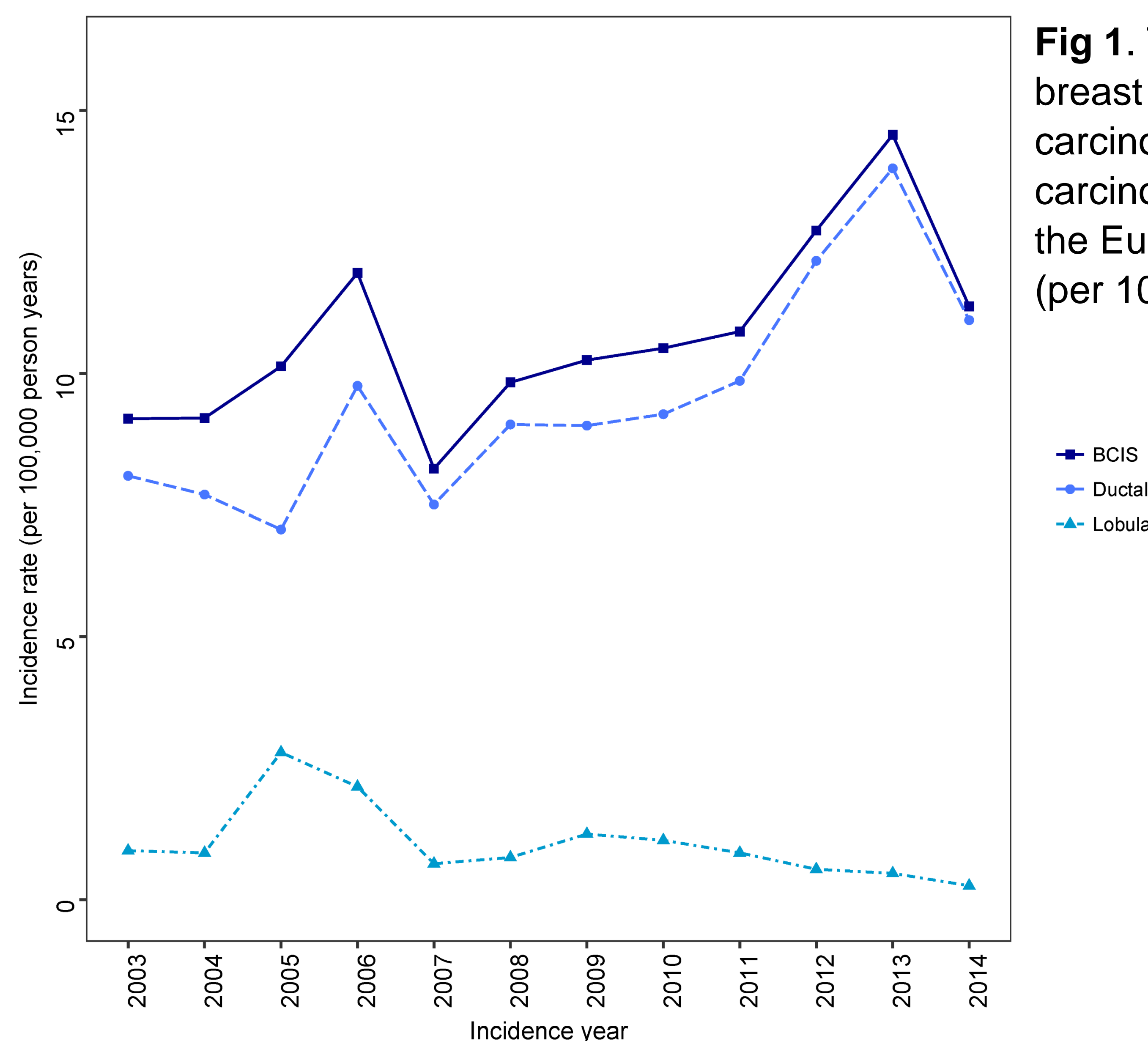
- ❖ Mean age at diagnosis was 57.8 years. More than half of the BCIS cases were diagnosed on the left breast (Table 1).
- ❖ For most participants, breast-conserving surgery was the treatment of choice.
- ❖ The overall BCIS ASR was 10.7 cases per 100 000 person-years with an increasing linear trend over the study period (Average Annual Percentage Change: 3.1, 95% CI: 0.8, 5.5). A similar trend was observed for DCIS ASR, while LCIS ASR decreased (Fig 1).
- ❖ 50-59 year old women had the highest BCIS ASR (Fig 2).
- ❖ The highest increase in BCIS ASR, even though not statistically significant, was observed for the <40 year age group.

## Conclusions

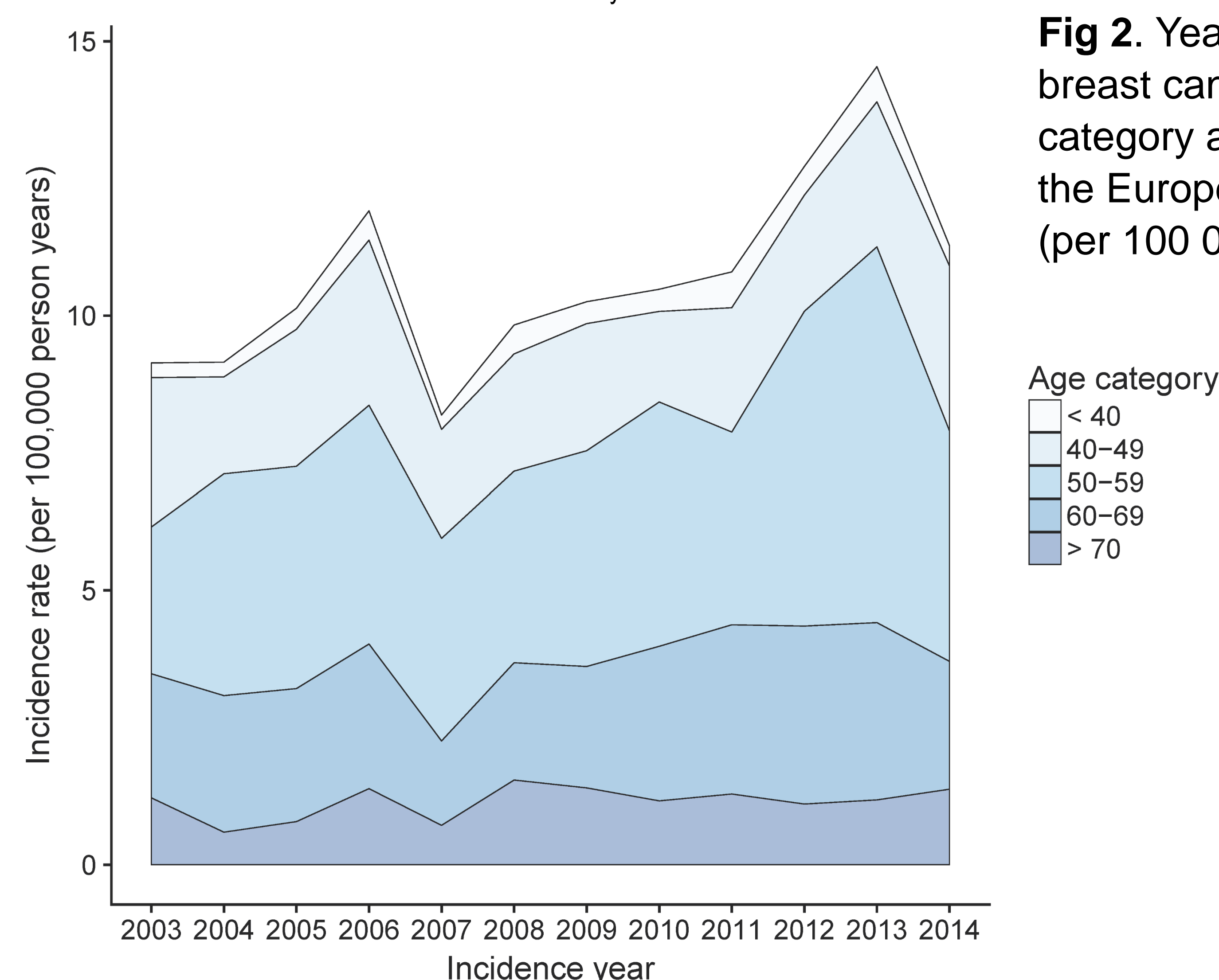
- ❖ BCIS ASR increased linearly over a 12-year period.
- ❖ Women younger than 40 years of age may be in need of closer monitoring.
- ❖ Patient and tumor characteristics of young cancer patients warrant further investigation.

**Table 1. Baseline characteristics of the total study population and stratified by in-situ breast cancer sub-type**

	BCIS (n=989)	DCIS (n=885)	LCIS (n=94)
Age at diagnosis, years	57.8 ± 11.2	57.9 ± 11.3	56.6 ± 9.9
Laterality, n (%)			
Left	531 (53.7)	477 (53.9)	50 (53.2)
Grade, n (%)			
Low	239 (26.7)	237 (26.8)	-
High	322 (36.0)	319 (36.0)	-
Treatment, n (%)			
Mastectomy	137 (13.9)	134 (15.1)	2 (2.1)
Breast-conserving surgery	645 (65.2)	578 (65.3)	60 (63.9)
Radiotherapy	79 (8.0)	76 (8.6)	2 (2.1)
Nationality, n (%)			
Swiss	663 (67.0)	608 (68.7)	48 (51.1)
Marital status, n (%)			
Married/ Living together	470 (47.5)	428 (48.4)	39 (41.5)
Swiss neighborhood index of socioeconomic position	69.7 ± 4.8	69.7 ± 4.8	70.0 ± 4.4



**Fig 1.** Trends in incidence of in-situ breast cancer (BCIS), ductal carcinoma in-situ (DCIS) and lobular carcinoma in-situ (LCIS), adjusted for the European standard population (per 100 000 person-years)



**Fig 2.** Yearly incidence of in-situ breast cancer (BCIS) per age category at diagnosis, adjusted for the European standard population (per 100 000 person-years)