

SUNBEDS AND SUNBURNS IN ICELAND

Sunburns are relatively frequent abroad and in sunbeds

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Because UV-exposure is the main risk factor for skin cancers, a low incidence rate of melanoma can be expected in Iceland due to its northern latitude. This used to hold true until the 1990s when the incidence rate of melanoma rose rapidly in Iceland. Among women it became the highest in the Nordic countries. This development is portrayed by a figure in a pan-Nordic document: **Common public health advice from Nordic radiation protection and health authorities**. Press release 28 Feb 2005. See next slide:

INCREASE IN INCIDENCE RATE OF MELANOMA 1990-2000

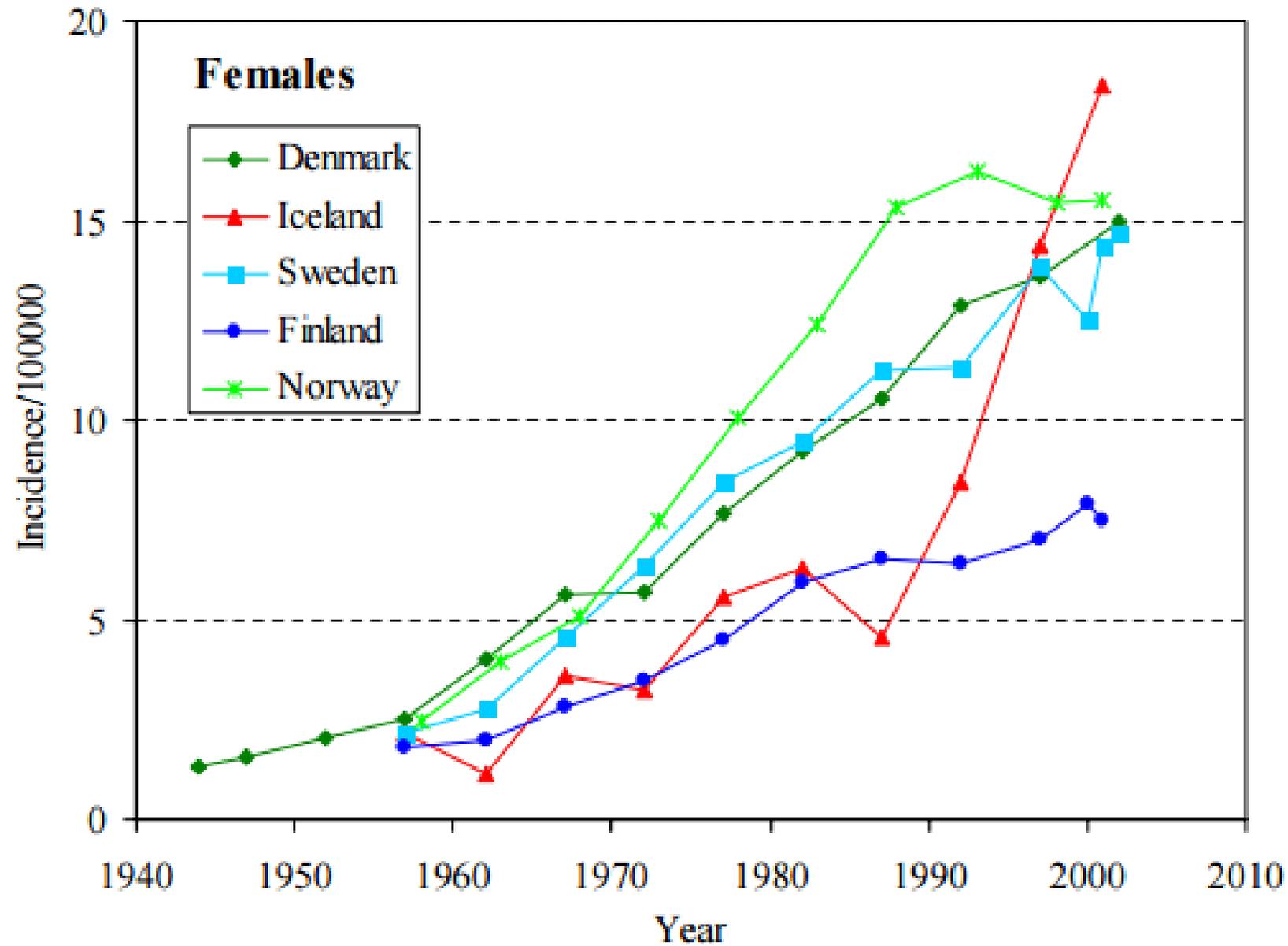


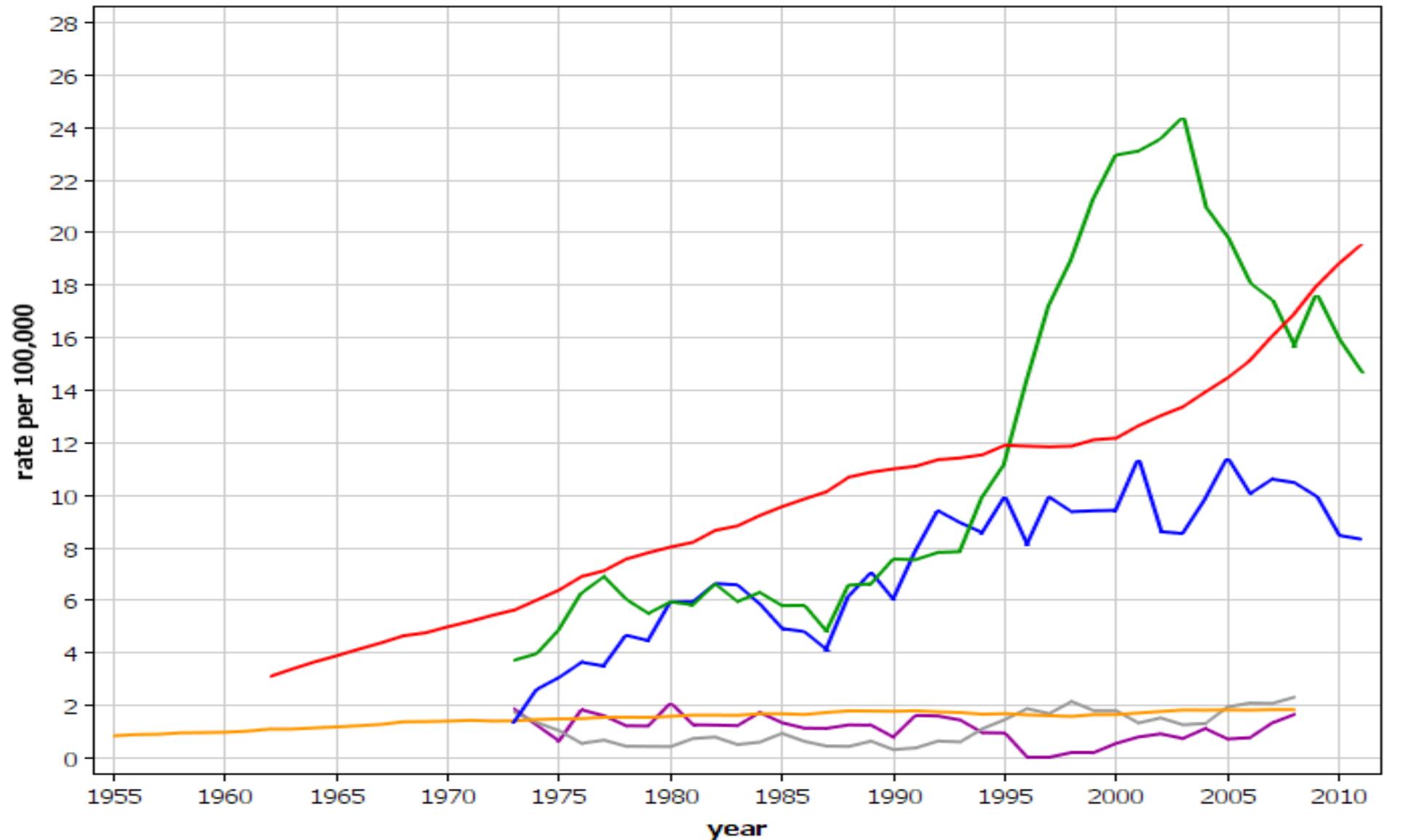
Figure 1. Melanoma incidence in Nordic countries, age standardised according to the WHO-world population.

The incidence rate in Iceland **declined after year 2000** and it is currently below the Nordic average, see next slide. It has been suggested that the increase was due to the introduction of the modern type of sunbeds in the 1980s. Some support for that is the following information from the on-line Nordic cancer registries:

- ▶ The incidence increase was most marked among **young women**, the typical customers of sunbed saloons.
- ▶ The increase was **confined to the capital** area (see next slide). It seems likely that sunbed use is part of an urban lifestyle.
- ▶ In addition to the incidence increase of melanoma there was an **increase in the mortality rate** for women in the capital in the years 1991- 2009 as compared to 1973 – 1990 (according to figure in the next slide). The mortality rate for women on the countryside did not increase.

WHY SUNBEDS?

Melanoma of skin ASR (World), Female age 0-85+



■ Incidence: Nordic countries
■ Mortality: Nordic countries

■ Incidence: IS, Reykjavik-Reykjanes
■ Mortality: IS, Reykjavik-Reykjanes

■ Incidence: IS, Outside the capital
■ Mortality: IS, Outside the capital

These observations may be due to other causes than the use of sunbeds. The increased incidence rate of melanoma might partly be due to an increased effort in finding cancers at their earlier stages even if this does not suffice to explain the apparent increase in mortality. Increase in travel to sunnier places may also have been a contributing factor.

Data for number and usage of sunbeds on the countryside are not available until 2004 and later. It is likely that Reykjavik had more sunbeds per capita than the countryside in the beginning (1980–1990) but it must be noted that recent surveys have not reported large differences between the countryside and the capital in sunbed numbers and use.

WHY SUNBEDS?

The economic crisis in Iceland in 2008 gives a unique opportunity to study the **effect of travel** on sun-exposure. With increased financial well-being, Icelanders travelled abroad in ever-greater number. In 2007, at the height of an economic upheaval, Icelanders were subsequently more likely to spend their summer vacation abroad than ever before.

The data in this study originates from the **health and lifestyle survey** “Heilsa og líðan Íslendinga” carried out by the Public Health Institute of Iceland in year 2007 and by the Directorate of Health 2012 [5, 6]. The sample was a stratified random sample of **10.000 individuals** between 18-79 years. The response rate in 2007 was 60.8% and 54.5% in 2012. Questions were asked for present outdoor tanning habits, location (Iceland/abroad) sunbed use and self-reported sunburn, location (Iceland/abroad) and burn from sunbed use during **the past 12 months**.

SUNBURNS BEFORE AND AFTER AN ECONOMIC CRISIS

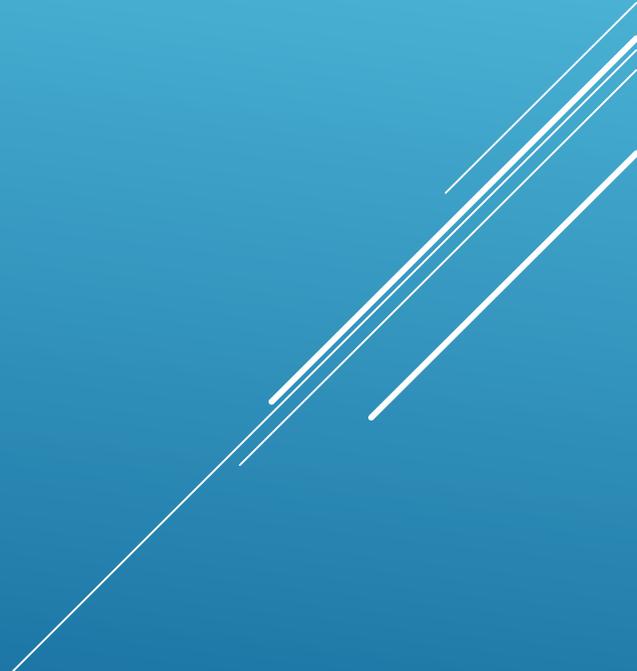
Year	Age	Sunburns Domestic	Sunburns Abroad
2007	18 and older	17%	19%
2012	18 and older	25%	11%

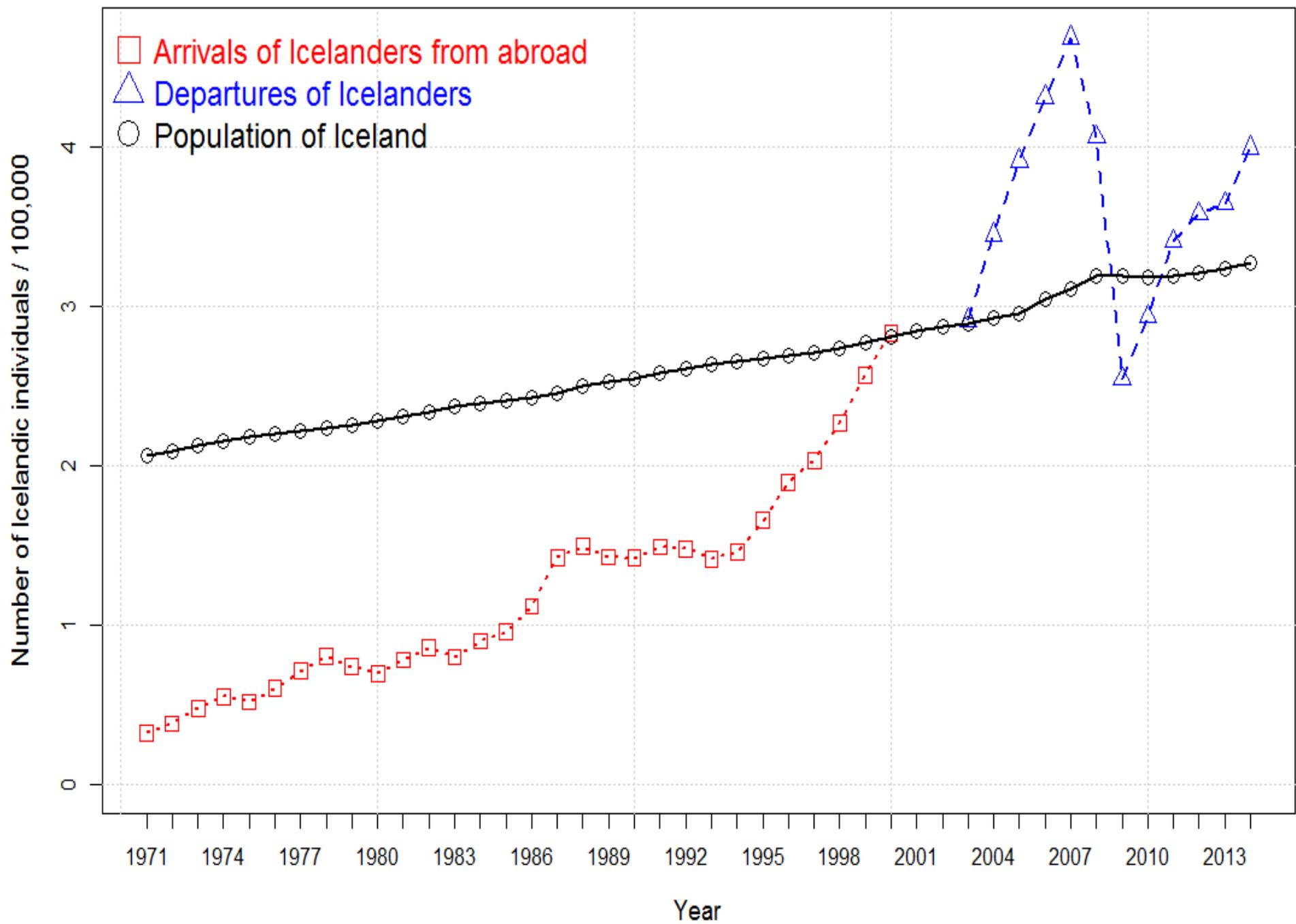
SUNBURNS BEFORE AND AFTER AN ECONOMIC CRISIS

In 2007, a higher proportion of Icelanders reported that they had sunburned abroad than domestically. In 2012 after a devaluation of the currency and introduction of capital controls, this was reversed. Sunburns abroad seemed however still to be common.

The frequency of sunburns abroad was probably not this high in the 20th century when Icelanders travelled far less. See figure in next slide. The data is from the web of Statistic Iceland.

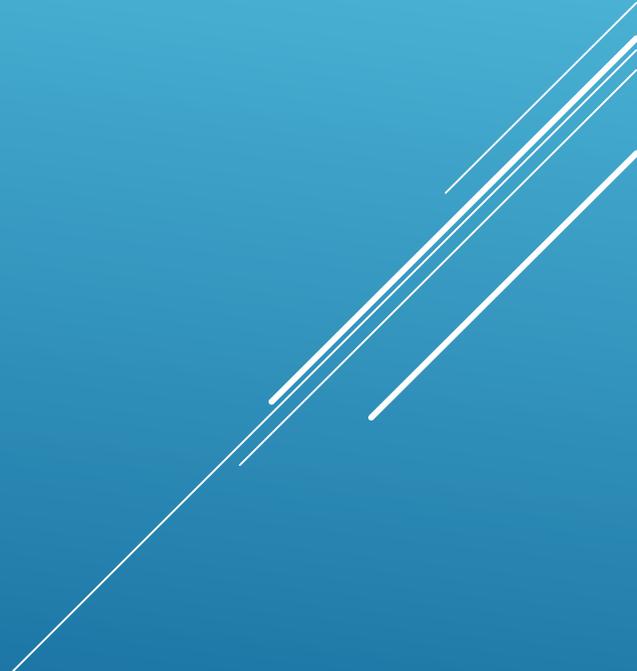
TRAVELS BEFORE AND AFTER AN ECONOMIC CRISIS

A decorative graphic consisting of several parallel white lines of varying lengths, slanted upwards from left to right, located in the bottom right corner of the slide.



Another interesting outcome of the lifestyle surveys in 2007 and 2012 is a relatively high percentage of Icelanders reporting burns in sunbeds.

SUNBURNS AND SUNBEDS

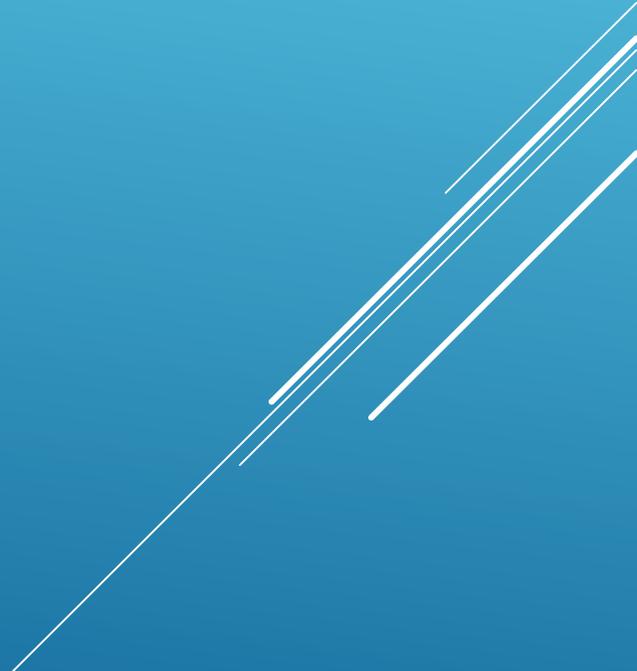
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Year	Age	Burns in sunbeds
2007	18 and older	7.5%
2012	18 and older	4.3%

SUNBURNS AND SUNBEDS

The number of sunbeds in Reykjavík decreased rapidly between 2007 and 2012, which is probably reflected in the previous percentages. There had however already been a decrease since 1988 as seen in the next table. During that time, burns in sunbeds are likely to have been even more common.

SUNBURNS AND SUNBEDS

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	1988	2005	2008	2011	2014
Number of sunbeds in capital	207	144	98	76	61
Number per 1000 in capital	1.5	0.8	0.5	0.4	0.3

SUNBURNS AND SUNBEDS

Even with a greatly reduced number of sunbeds, some percent of **Icelanders are still reporting burns in sunbeds**. This supports the suggestion that sunbeds may have played a role in the increased incidence rate of melanoma between 1990 and 2000.

In the last decades, **a large proportion of sunburns occurred during sunbathing abroad**. The proportion diminished after the economic crisis in Iceland took hold with reduced travelling but still remained large. Therefore, future skin-cancer-prevention-programs in Iceland might want to emphasize warnings for sunbed users and messages that enhance sun protection among those who travel to sunny resorts in lower latitudes.

CONCLUSIONS

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REFERENCES – SEE PAPER IN
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