

# Melanoma in Brazil: incidence and mortality in the last 15 years

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## BACKGROUND

According to the Brazilian National Cancer Institute – INCA – the projection for 2018 is to have 6,260 cases of melanoma, accounting for 3.6% of all skin cancers, with 1,547 related deaths. Brazil is a large country with deep regional contrasts and a population formed by an admixture from three different ancestral roots - Amerindians, Europeans and Africans - resulting in a great variability of skin pigmentation. Melanoma incidence and mortality in this heterogeneous population is poorly described in the literature.

## METHODS

The main objectives of this research were to evaluate temporal trends in incidence and mortality. The data came from Brazilian Population Based Cancer Registries, and the National Mortality Information System from 2000 to 2014. To describe trends in change in incidence and mortality rates, the Average Annual Percentage Change (AAPC) was calculated.

## RESULTS

Between 2000 and 2013, in men, the median incidence rate adjusted for the world population rose from 2.52 to 4.84 per 100,000, with an AAPC of +21.5% (95% CI +15.4 to +28.0); while among women, in the same period, the increase was from 1.93 to 3.22 per 100,000, with an AAPC of +13.9% (95% CI +8.1 to +20.0). Regarding mortality, between 2000 and 2014, the rates went from 0.85 to 0.90 per 100,000 for men (AAPC = +0.8, 95% CI +0.4 to +1.1), and from 0.56 for 0.53 per 100,000 for women (AAPC = -0.1, 95% CI -0.2 to 0.0), respectively – Figure 1.

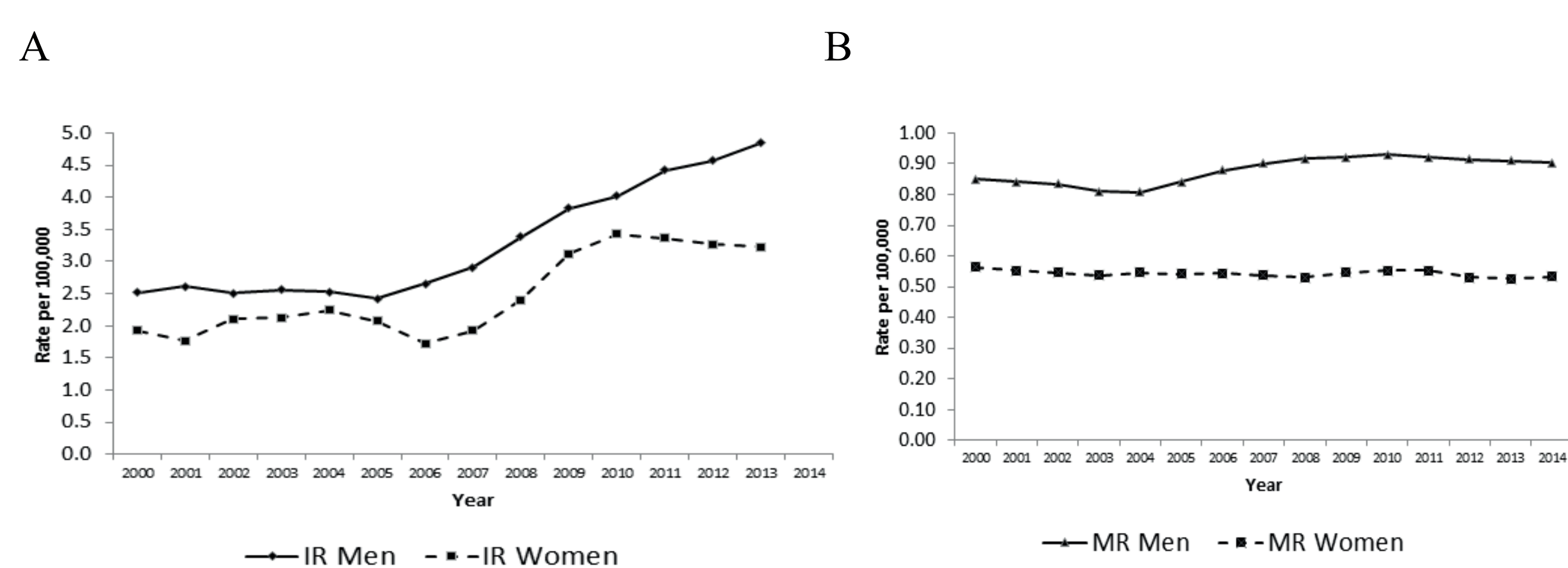


Figure 1. A – Adjusted incidence rate per 100,000 of melanoma in Brazil (2000–2013) B – Adjusted mortality rate per 100,000 of melanoma in Brazil (2000–2014)

## DISCUSSION

The incidence rate of cutaneous melanoma is rising globally with some countries counting more than a seven-fold increase during the last 50 years<sup>1,2</sup>. In the United States (USA), at current rates, 1 in 74 Americans will develop melanoma during a lifetime<sup>3</sup>. In Brazil, after 2000, both incidences in men and women started to climb and an additional doubling of incidence rates happened moving from 2.52 to 4.84 in men and from 1.93 to 3.22 per 100,000 inhabitants in women. This is not only a local trend as melanoma represents a significant public health problem with its incidences rising faster than that of any other cancer in the USA.

The number of new melanoma cases will rise around the world because of aging populations and high specific melanoma rates in the elderly. In white Americans, annual new cases are expected to rise from around 70,000 in 2007-2011 to 116,000 in 2026-2031, with 79% of the increase attributable to rising age-specific rates and 21% to population growth and aging<sup>4</sup>.

In the past decades, the incidence of melanoma increased in epidemic proportions. The main reason for that pseudo-epidemic is the improved criteria and techniques for diagnosis that allow melanomas to be recognized more accurately and at earlier stages. Some countries have registered an increase in the skin biopsy rate of approximately 6% per year despite an increase in the overall melanoma incidence rate < 1% per year over the same period of time<sup>5,6</sup>.

There is no global consensus regarding survival over time. In Europe from 2000 to 2014 there was a tiny increase in mortality in men and a decrease in women. Part of the improvement in survival may be attributed to early diagnosis<sup>7</sup>. Regarding mortality in Brazil, the results presented here were quite similar at the same time interval with mortality in men ranging from 0.85 to 0.90 per 100,000 and in women decreasing from 0.56 to 0.53 per 100,000. Whereas incidence rates have continued to increase in recent birth cohorts, mortality rates have stabilized in many countries<sup>8</sup>.

## CONCLUSION

In Brazil, after 2000, both incidences in men and women started to climb and an additional doubling of incidence rates happened moving from 2.52 to 4.84 in men and from 1.93 to 3.22 per 100,000 inhabitants in women. Whereas incidence rates have continued to increase in recent birth cohorts, mortality rates have stabilized. Understanding the incidence and mortality trends attributed to melanoma is important for behavioral counseling interventions that focus on promoting skin cancer prevention.

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