

# Relative risk rather than absolute risk reduction should be preferred to sensitise the public to preventive actions

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We thank Lawrence and colleagues<sup>1</sup> for their interest in our work,<sup>2</sup> about which they raised some comments as the need of expressing results in absolute rather than relative risks.

As they appropriately mentioned in their correspondence, absolute risk is an important parameter for the estimation of the effect of an intervention and must sometimes be preferred to relative risk.

However, when discussing with health professionals and policymakers, using absolute risk reductions, expressed as percentages, may incorrectly lead to an intervention being considered unnecessary. As example, what would be the point of reducing by 30% the occurrence of an event affecting 2% of the population? This is exactly what we were confronted to with the COVID-19 pandemic, when policymakers were criticised for putting in place measures to reduce individual freedoms, which were considered excessive in relation to the perception of risk by the public, for a disease whose overall case fatality is in the 2%–4% range<sup>3</sup>—exactly the same magnitude as that of colorectal cancer (CRC) incidence (2%) reported by Lawrence<sup>1</sup> and colleagues, although the GLOBOCAN data were incorrectly cited.<sup>4</sup> Indeed, 2% is the cumulative risk of developing a CRC in the first 74 years of life. However, it is estimated that about 30% of CRC occur in patients of age 75, and

that the lifetime cumulative risk for CRC is approximately 4.1% in women and 4.4% in men.<sup>5</sup>

Therefore, when discussion of a risk, and its reduction, targets health professionals and policymakers, the most meaningful approach is to combine relative risk reduction and absolute number of cases avoided or of lives saved. In their initial submission, Lawrence<sup>1</sup> and colleagues did not consider the absolute numbers that are of great concern when actually realising the number of lives which could be potentially saved each year, which reaches around 350 000 worldwide.<sup>6</sup>

In contradistinction, when interacting with the public at large, we strongly recommend the use of relative risk instead of absolute risk reduction. Indeed, this should be done in order to effectively and convincingly promote health interventions of proven, or strongly suggested, benefits, such as CRC screening.

The recent example of COVID-19 vaccination is illustrative. Preliminary results from mRNA COVID-19 vaccines suggested a relative risk reduction for confirmed COVID-19 cases of around 95% in the vaccinated compared with the placebo group, which has no doubt contributed to driving public adherence to vaccination.<sup>7</sup> It may have been much less the case had the absolute risk reduction been discussed, which was around 1% (confirmed COVID-19 cases 1.21% and 0.07% in the non-vaccinated and vaccinated groups, respectively<sup>7</sup>).

Among all the 369 diseases tracked by the Global Burden of Diseases in 204 countries, CRC is the 15th leading cause in the population aged 50–74 years old and the 13th among patients over 75 worldwide.<sup>8</sup> Furthermore, there is a widely reported increase in the incidence of early-onset CRC,<sup>9</sup> unlikely to be prevented by existing screening programmes. A 25%–50% relative risk reduction of CRC corresponds to a striking decrease in thousands, even millions, of lives improved or spared,<sup>6</sup>

with great impact on quality of life and socioeconomic burden. Such a public health perspective helps transparency while convincingly laying out arguments for promoting interventions aimed at reducing the risk of CRC; this was the aim of our published meta-analysis and, we feel, justifies our use of relative risk reduction.

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