

Measles: almost one in 10 Italians susceptible to the virus, Adults aged 20-40 most at risk

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A study coordinated by the ISS and FBK, published in The Lancet Infectious Diseases, reveals that nearly one in ten Italians lacks immunity to measles.

Almost 10% of the Italian population is susceptible to measles—namely, they lack immunity either from vaccination or previous infection. Young adults aged 20 to 40 are particularly at risk in many regions, including those with high childhood vaccination coverage. These are the findings of a **study** led by the **Istituto Superiore di Sanità (ISS) and Fondazione Bruno Kessler** and published in the journal **The Lancet Infectious Diseases**.

The study analyzed **nearly 15,000 measles cases** (including 14 deaths) reported to the national integrated surveillance system for measles and rubella **between 2013 and 2022**. The **highest incidence** was among **children under five**, while over half of the cases involved **young adults between 20 and 39 years old**. Among cases with known vaccination status, almost nine out of ten individuals were unvaccinated. Some outbreaks were analyzed in greater **detail to understand transmission** dynamics. Using a mathematical model that integrated epidemiological and demographic data, researchers estimated the number of measles-susceptible individuals in each region of Italy as **of 2025**. Here's what they found:

- The vast majority (88.9%) of secondary infections—those occurring after the so-called index case—were caused by unvaccinated individuals. Only 1.1% occurred in individuals vaccinated with at least one dose.
- One-third (33.3%) of transmission episodes involved young adults, who were also responsible for a significant proportion of transmissions to children under five. Family settings accounted for 35.5% of secondary infections.
- In 2025, an estimated 9.2% of the Italian population will be susceptible to measles. Among people under 20, only 88.2% are immune. There is significant regional variation: northern and

central regions have the highest overall susceptibility, while among those under 20, the provinces of Bolzano and Calabria show the highest rates of susceptibility.

- Although some regions have achieved high childhood vaccination rates since the 2017 mandatory vaccination law, this does not always correspond to a lower risk of transmission, largely due to significant numbers of unimmunized adults.
- The estimated basic reproduction number (R) for 2025 ranges from 1.31 to 1.78 across regions, consistent with transmission patterns observed in previous outbreaks.

“Unvaccinated adults contribute substantially to measles transmission in Italy,” the authors conclude. There is significant regional variability in immunity: some regions have low childhood vaccination coverage, while others have large proportions of susceptible adults. These results highlight the need for targeted vaccination strategies, including catch-up campaigns focused on adults.”

Italian National Health Institute (ISS)

The Istituto Superiore di Sanità (ISS) is Italy’s leading center for research, control, and scientific guidance on public health. Around 1,800 staff—including researchers, technicians, and administrative personnel—work to protect the health of citizens. The ISS operates through six departments, 16 national centers, two reference centers, five technical-scientific services, and a Notified Body for the evaluation of medical device compliance.

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