



## KNOWLEDGE, ATTITUDES, AND PRACTICES OF ITALIAN OCCUPATIONAL PHYSICIANS TOWARDS TBE

### Background

Italy has historically been considered as a relatively low-risk TBE region, having no cases reported until 1975. And with an incidence of 0.1 per 100,000 population/year between 2000 and 2016 it remained a low-incidence country. Since then, an increase of TBE cases has been reported, especially in the northeastern subalpine region (Trentino, South Tyrol, Friuli-Venezia-Giulia, Veneto), and some areas can be classified as high-risk areas with more than 5 cases per 100,000 population per year (see also Snapshot [week 17/2020](#) and [week 48/2019](#)). Consequently, TBE vaccination is recommended for outdoor workers (forestry workers, farmers, veterinarians) in endemic regions. Application of immunization policies for workplaces is the main issue for occupational physicians. The knowledge, attitudes, and practices (KAP) of Italian physicians towards TBE prevention measures have so far been scarcely investigated but have now been analyzed in a study.

### Results

A cross-sectional questionnaire-based study was performed on Jan./Feb. 2020, involving occupational physicians participating in seven different private Facebook group pages. A General Knowledge Score (GSK) was calculated as well as a Risk Perception Score (RPS). A total of 229 occupational physicians (11.3% of the eligible population) participated in the inquiry. Overall, nearly 42% of the participants came from northern Italy, 41% from Central Italy and 17% from southern regions.

The GSK was low, e.g. only 17% of the respondents were aware that they live and work in a region from where TBE cases have been

reported. Only 28% acknowledged TBE as a vaccine preventable disease and only 27% knew that TBE vaccine does not protect against Lyme disease. There were also uncertainties about other arboviruses: Only 7% clearly stated that dengue virus cannot be transmitted by ticks and only 14% correctly reported that the primary vector for Crimean-Congo hemorrhagic fever virus are ticks. Less than 20% of the respondents acknowledged that they usually recommend TBE vaccination for outdoor workers. A mixed understanding of behavioral adaptations was reported, e.g. use of repellents, use of pesticides (anti-acaricides), putting the end of trousers into socks etc.

Less than 17% of the respondents acknowledged TBE severity as significant/highly significant and the large majority did not characterize TBE as a disease with significant severity. RPS and GSK were well correlated: a better knowledge status was associated with greater risk perception for TBE infection, showing that the knowledge status is a logical prerequisite to raise risk perception, which in turn promotes behavioral adaptations.

### Discussion

These investigations have shown significant knowledge gaps and misunderstandings on up-to-date vaccinology among Italian occupational physicians. Principally, occupational physicians are quite effective in implementing acceptance and knowledge among high-risk workers. Addressing knowledge gaps of occupational physicians may then maximize the consent for vaccination programs, but so far, vaccination rates for TBE among high-risk workers remain low in Italy, also among farmers in northeastern Italy (see also Snapshot [week 40/2019](#)). There is a limitation to this study: with only 229



professionals among over 7000 occupational physicians, the sample size was small and a certain selection may have been performed by social media users in this survey. However, the results suggest an extensive lack of knowledge of sampled occupational physicians on TBE vaccination and the results suggest that a significant share of occupational physicians does not act in accordance with or only partially applies official recommendations on TBE vaccinology.

## Literature

Riccò et al.

Knowledge, attitudes, practices (KAP) of Italian occupational physicians towards tick borne encephalitis

Trop. Med. Infect. Dis. 2020, 5, 117, doi:10.3390/tropicalmed5030117

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