

Europe Ticker +++

WHO Europe and Healthcare Denmark

Cooperation in the health sector



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WHO Europe and Healthcare Denmark have signed a memorandum of understanding (MoU) to advance cooperation in the areas of digital health, health data, artificial intelligence (AI), and health care innovation across the 53 countries of the WHO European Region. Under the agreement, WHO Europe will share its global expertise on digital health and artificial intelligence with Healthcare Denmark and relevant Danish stakeholders. WHO Europe will participate in delegation visits, roundtables, webinars, and other professional exchange events, and will help disseminate evidence-based, innovative health concepts tailored to the needs of the countries. “I have seen what Denmark has achieved, and it is impressive,” said Dr Hans Henri P. Kluge, WHO Regional Director for Europe. “The country has a health system in which data is securely shared among patients, doctors, and researchers, and in which AI supports—rather than replaces—doctors. For its part, Healthcare Denmark aims to promote knowledge sharing by disseminating Denmark’s experiences and best practices. Key areas for collaboration include digital transformation, health information systems, data analytics, and AI in healthcare—all of which are addressed in the regional digital health action plan for the WHO European Region (2023–2030).

Source: WHO Europe

Caries risk assessment
in European dental practices

Hardly any standardised tools

Standardised tools for assessing the risk of caries are still rarely used in European dental practices. This is shown by a recent international observational study reported in the *British Dental Journal*. In day-to-day practice, caries management does not begin with the lesion itself. The crucial question is how an individual’s risk is assessed in the first place, and it is precisely here that a mixed picture emerges across Europe. As part of the so-called CARMEN study, treatment data and procedures from 51 dentists across four European countries were analysed. In total, the data included 1,008 patients who required caries risk management. The analysis shows that fewer than 15 per cent of participants used standardised tools to assess individual caries risk. Instead, many decisions are based on traditional methods such as clinical examination and medical history. Additional factors often play only a minor role in this process.

Dietary habits and fluoride intake are less frequently recorded systematically. Saliva tests and microbiological analyses are rarely used in day-to-day dental practice. This becomes even clearer when looking at patient groups. The risk of dental caries increases as socioeconomic status declines. At the same time, dentists with the relevant university training are more likely to follow recommended practices.

The findings are based on the study “Caries risk assessment and management in Europe: the multi-country observational CARMEN study” by Frias-Bulhosa et al., published in 2026 in the *Dentistry Journal* and summarised in the *British Dental Journal*.

Sources: ZWP online, *British Dental Journal*

Infectious diseases on the rise in Europe

Climate change is reshaping the landscape

For a long time, diseases such as dengue fever, chikungunya fever and West Nile fever were regarded as typical tropical and subtropical diseases. However, these infections are now increasingly being reported in Europe.



Experts see this as a direct consequence of climate change. Milder winters, longer summers and changing rainfall patterns are creating more favourable living conditions for mosquito species that were originally native to warmer regions. The European Centre for Disease Prevention and Control (ECDC) is therefore warning of the increasing establishment of mosquito-borne viral diseases on the continent. The Asian tiger mosquito plays a key role in this. Originally native to South-East Asia, this species has become established in numerous European countries over the past few decades. It is considered a major vector for the dengue, chikungunya and Zika viruses. Germany is now also among the countries where the tiger mosquito has become permanently established. Populations are found particularly in south-western Germany and in certain conurbations such as Berlin.

Source: medscape, 12 June 2026

Severe fatigue detectable in biomolecules

Biomarkers identified in saliva

A research team at the University of Zurich has, for the first time, identified biomarkers for severe fatigue in saliva. Acute sleep deprivation can be detected using just a single saliva sample. This method could help to improve safety in traffic and safety-critical professions in the future. The research team from the Institute of Forensic Medicine and the Institute of Pharmacology and Toxicology at the University of Zurich (UZH) has now investigated whether sleep deprivation can be detected based on metabolic changes in saliva. "Our study provides the first direct biomarkers for sleep deprivation in saliva under real-life conditions, marking a milestone for forensic research," says Thomas Krämer, Professor of Forensic Pharmacology and Toxicology at the Institute of Forensic Medicine at UZH. For the study, the researchers examined 20 healthy young men. The participants underwent three scenarios in random order: one night without sleep, four nights with two hours less sleep than usual each night, and a control condition with around eight hours' sleep. The team then analysed the saliva samples using high-resolution mass spectrometry and, with the aid of machine learning techniques, searched for molecular patterns indicative of acute sleep deprivation. "We found that severe sleep deprivation affects around ten per cent of all biomolecules in saliva. The challenge was to filter out precisely those molecules from tens of thousands that reliably indicate fatigue. Using state-of-the-art technology, we have succeeded in identifying ten biomarkers that fulfil precisely this task," says lead author Michael Scholz. As part of his doctoral thesis, he has focused intensively on the question of how fatigue can be objectively measured in the body. The project is now entering its next phase with a large-scale international field study.

Source: zm Deutschland

Scholz M. et al., *Leveraging the Metabolic Fingerprint of Sleep Deprivation and Sleep Restriction for Forensic Applications: A Machine Learning Study in Oral Fluid Metabolomics*. *J Proteome Res.* 2026 Jun 5;25(6): 2740-2750. doi: 10.1021/zcs.jproteome.5c01064. Epub 2026 May 6. PMID: 42090244; PMCID: PMC13247977.