

Nicotine and caffeine withdrawal may lead to unnecessary suffering and testing in intensive care patients

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Nicotine and caffeine withdrawal can cause unnecessary suffering to patients in intensive care units (ICUs), and could be leading to unneeded laboratory testing and diagnostic imaging such as X-rays and MRIs, according to a systematic review of clinical and observational studies involving 483 adults.

The findings are being presented at this year's Euroanaesthesia congress (the annual meeting of the European Society of Anaesthesiology) in Vienna, Austria (1-3 June).

"Nicotine and caffeine are some of the most commonly used and highly addictive substances in modern society, but they are often overlooked as a potential source of significant [withdrawal symptoms](#) when abruptly discontinued in ICU", explains Associate Professor Maya Belitova from University Hospital "Tsaritsa Yoanna—ISUL, Sofia, Bulgaria who led the research.

"Withdrawal symptoms including nausea, vomiting, headaches, and delirium can last for up to 2 weeks. These symptoms resemble conditions such as meningitis, encephalitis, and intracranial haemorrhage—this may confuse [clinical diagnosis](#) and result in unnecessary tests which can cause patient harm, cost a lot of money, and waste time."

In Europe, up to 27% of the population smokes, and more than half drink coffee. The [systematic review](#), synthesising all the available evidence from the scientific literature, included 12 studies investigating withdrawal symptoms and treatment in ICUs between 2000 and 2018, involving 483 adults (aged 18-93).

Results showed that acute nicotine withdrawal substantially increases agitation (64% smokers vs 32% non-smokers) and the number of tracheal tube and intravenous line displacements caused by agitation in ICU patients (14% smokers vs 3% non-smokers).

However, nicotine substitution therapy was shown to contribute to the development of ICU delirium (severe confusion and disorientation)—which is associated with prolonged intubation, increased length of stay, and greater risk of dying.

Abrupt caffeine withdrawal leads to drowsiness, nausea, vomiting, headaches, and can increase rates of ICU delirium. Caffeine benzoate has been successfully used to treat headaches but substitution in the ICU has a limited [evidence base](#).

"ICU patients may benefit from nicotine substitution or caffeine supplementation, but with little evidence for their effectiveness, this should be left up to the judgement of treating physicians", says Professor Belitova. "There is lack of evidence on abrupt caffeine [withdrawal](#), its complications and

therapeutic options. Future research should focus on acute [caffeine withdrawal](#) as an independent risk factor for agitation and delirium in ICU and on available treatment options."

Provided by European Society of Anaesthesiology

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