

the risk of cancer.

Although nicotine itself does not cause cancer, it is highly addictive, and Palau and public-health researchers argue that it should be regulated in the same way as narcotics and psychoactive drugs. The archipelago says existing global efforts to protect people against the harms associated with nicotine addiction target only tobacco, leaving loopholes for tobacco-free products such as vapes and nicotine pouches.

"This is about our children," said the nation's first lady Valerie Whipps, who is chair of the Coalition for Tobacco Free Palau, in a press release. "A new generation of young people across the Pacific are being targeted by products that have never been critically reviewed under UN law." In 2023, Palau banned vapes from being imported, sold or used. In 2021, 29% of adolescents aged between 9 and 20 years old in Palau had used vapes.

Currently, countries decide how to regulate cigarettes, vapes and other products containing nicotine, says K. Michael Cummings, a tobacco-control researcher at the Medical University of South Carolina's Hollings Cancer Center in Charleston.

But most countries do not regulate nicotine, meaning that new forms of the compound that are not covered by existing rules can be developed. For example, the regulations for how nicotine pouches – small sachets placed between the gum and lip that release nicotine – are sold and packaged vary across the world. Age limits on who can purchase these products and what health warnings they display differ, too. Some countries treat vapes as tobacco products, whereas others might consider them as consumer or medicinal products.

Palau wants nicotine added to the UN Convention on Psychotropic Substances, one of three conventions that aim to prevent harms caused by narcotics and psychoactive drugs while ensuring they are still available for research and medical uses. Adding nicotine to the UN convention would mean it is treated in a consistent way across the world.

What's next?

Following Palau's request to add nicotine to the UN's schedule, the drug will undergo a medical and scientific assessment of the potential to abuse it, its negative effects and how useful it is as a medicine. This will be performed by the WHO Expert Committee on Drug Dependence. Then, 53 member states will vote on whether nicotine should be added to the lists. The vote is expected to happen in March 2028.

Cummings says that if the UN does what Palau has asked, it will also be important to ensure that nicotine remains available for nicotine replacement therapy, which is used mostly by people who are trying to quit smoking, in the form of patches, gum and lozenges.



Physicians grew accustomed to using artificial intelligence to spot precancerous growths.

IS AI RUINING OUR SKILLS? EARLY RESULTS DON'T LOOK GOOD

Reliance on artificial-intelligence tools degrades the abilities of physicians and software engineers.

By Mariana Lenharo

As more professionals begin to rely on artificial-intelligence tools in their work, could their hard-earned skills atrophy?

That possibility is a growing concern for medical specialists, computer scientists and other workers. Seventy per cent of nurses and 77% of physicians, for example, are worried about losing their skills because of over-reliance on AI systems, according to a survey of US health-care workers published in June¹.

Their fear might be justified. Evidence suggests that AI-driven 'deskilling' is starting to happen in medicine, computer science and other fields. Researchers are now discussing how to preserve important human expertise in the age of AI.

"Just being aware that this phenomenon exists hopefully provokes some self-reflection about which skills people want to maintain and which they're willing to outsource" to AI tools, says Kevin Crowston, an information scientist at Syracuse University in New York.

Spoiled by AI?

A study² of physicians in Poland who specialize in endoscopy – the use of flexible probes to

examine the inside of the human body – shows how quickly AI tools can erode human abilities. The physicians, who had all performed at least 2,000 colonoscopies during their careers, were given access to an AI system that analyses colonoscopy images in real time and flags a type of precancerous intestinal lesion called an adenoma. The tool was available to the specialists on some days but not on others.

Once physicians began using it, their performance dropped significantly whenever the system was unavailable. During the three-month period before the AI tool was introduced, the specialists found at least one adenoma during 28.4% of colonoscopies. During the three-month period after the tool was introduced, the adenoma detection rate for colonoscopies performed without AI assistance decreased to 22.4%.

The findings, published last October in *The Lancet Gastroenterology and Hepatology*, suggest that even highly skilled professionals might get worse at tasks that their job requires as they become more dependent on AI tools, says Robert Wachter, a physician at the University of California, San Francisco, who is the author of a book on how AI tools are transforming health care. The study authors say that continuous exposure to such tools can cause clinicians to become "less motivated, less

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focused, and less responsible when making cognitive decisions without AI assistance”.

Co-author Yuichi Mori, a physician-researcher at the University of Oslo, says that more studies are needed to confirm the phenomenon. But people who use AI tools should be aware that they risk losing some of their skills, he adds. “There is no established solution against deskilling right now. It should be a very hot research topic in the next decade.”

No lesson learnt

To investigate whether skills are being lost in the field of computer science, researchers at the AI firm Anthropic in San Francisco, California, designed a randomized controlled trial in which 52 software engineers were asked to perform a basic coding task³. During the exercise, all 52 participants could search the web and access instructions on how to do the task. Half of the participants were prompted to use an AI assistant as well.

Afterwards, all of the software engineers were asked to complete a quiz about what they had learnt from the task. The participants who had used an AI assistant did significantly worse on the quiz than those who hadn't: the average score was 50% in the AI group versus 67% in the non-AI group. The AI-assisted participants did particularly poorly on questions that required them to diagnose errors in the code, which suggests that they had failed to learn the concepts behind the code that they had just produced. The study was posted on the preprint server arXiv ahead of peer review.

The findings are of concern, especially for students and young professionals in the field, says Crowston, who is researching how the use of generative AI tools is changing the way that software developers learn and retain coding skills. “Now you have this very odd disconnect between performance and learning,” he says. “People can perform at a pretty high level, because they're basically borrowing skills from the AI, but they are not developing those skills themselves.”

Outsourcing cognition

Other technologies have made particular skills obsolete in the past, notes Tapani Rinta-Kahila, an information-systems researcher at the Hanken School of Economics in Helsinki. For example, GPS navigation systems have eroded people's navigation skills. Generative AI tools, however, are “the first technology that automates various cognitive faculties around thinking and interpretation, which were long considered unique human skills”.

Rinta-Kahila's own work reinforces these concerns. In 2018, he published a study on a group of accountants who had been using an automated, non-AI accounting system continuously for more than a decade⁴. His team found that, when the tool was taken away, the accountants had forgotten how to do several

routine work tasks. He anticipates that AI systems will affect work in various ways as they take over basic tasks that were once performed by early-career professionals. “Next generations of programmers may not understand the foundations of coding that well at all, if they lack the hands-on experience,” he says. “The same goes for many other knowledge-intensive professions, such as accounting and law.”

To prevent AI-driven skill erosion, people need to be aware of how much they are offloading to generative AI tools, he says. They also need to understand exactly how generative AI

models work and what their limitations are – and should avoid trusting AI outputs without questioning them. “People need to manage the competing dynamics of relying on generative AI and staying mindfully vigilant.”

1. Wolters Kluwer. *Patients, Doctors, and Nurses on AI: Similar Tools, Different Pathways, One Destination* (Wolters Kluwer, 2026).
2. Budzyń, K. et al. *Lancet Gastroenterol. Hepatol.* **10**, 896–903 (2025).
3. Shen, J. H. & Tamkin, A. Preprint at arXiv <https://doi.org/10.48550/arXiv.2601.20245> (2026).
4. Rinta-Kahila, T., Penttinen, E., Salovaara, A. & Soliman, W. In *Proc. 51st Hawaii Int. Conf. System Sci.* (ed. Bui, T. X.) 5244–5253 (HICSS, 2018).



Researchers transplanted cells between a comb jelly (right) and a starlet sea anemone (left).

CELL TRANSPLANT HINTS AT HOW ANIMALS EMERGED

Embryonic ‘organizer cells’ can tell embryos of various phyla what kind of body to build.

By Ewen Callaway

More than a century ago, embryologist Hilde Mangold conducted a strange experiment that transformed biology.

As a PhD student in the 1920s, she moved a lump of cells from embryos of one newt species into another. The transplanted cells caused a secondary ‘body axis’ to form in the host embryo, complete with a nervous system and a precursor to the spine. Mangold showed that much of the secondary body axis developed from the recipient embryo tissues.

The discovery of an embryonic ‘organizer’ that orchestrates the formation of a body axis “established a whole new area of developmental biology”, says Stanislav Kremnyov, a developmental biologist at the Friedrich Schiller University Jena in Germany, who is now following in Mangold's footsteps.

In a study published on 17 June (S. Kremnyov et al. *Nature* <https://doi.org/hb738w>; 2026), Kremnyov and his colleagues report the discovery of an embryonic organizer in marine predators called comb jellies (Ctenophora) and their successful transplantation into sea anemones (Cnidaria) – which belong to an entirely

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