

Neurotechnology Progress Fuels Urgency Of Neural Data Privacy Regulation

This article, the first in a three-part series, explores legislative efforts aimed at protecting neural data, featuring expert insights from Cooley attorney Kristen Mathews.

Dec 15 2025 • By [Marion Webb](#)

Rapid advancements in neurotechnology intensify the need for clear regulations concerning neural data privacy. As these technologies evolve at unprecedented speeds, lawmakers, legal experts, and neuroethicists are increasingly focused on their societal impact.

As neurotechnology companies race to release devices, concerns are mounting over how users' sensitive neural data is being collected, used or sold.

Four US states – Colorado, California, Connecticut and Minnesota – have already enacted laws addressing neural data obtained from the brain. As of October, eight more states had bills pending that aimed to enhance consumer protections.

In the absence of federal law, New York-based Cooley LLP attorney Kristen Mathews suggests that businesses could benefit from establishing self-regulatory standards that might help guide future legislation.

Mathews, a Cooley partner specializing in cyber, data and privacy law, describes neural data legislation as “the next big thing” in privacy law. BCI technology, she says, could benefit people with significant needs, such as those who are paralyzed, have epilepsy, or live with ALS. She also warns of the risks, including possible misuse of neural data to manipulate behaviors or control thoughts.

Neurotechnology encompasses more than just devices that penetrate the brain, such as brain-computer interfaces, which fall under strict regulatory review. It also includes popular consumer wearables, such as

Key Takeaways

- Four states, Colorado, California, Connecticut and Minnesota, have enacted statutes that regulate neural data with varying approaches.
- In late September, three [US Senators](#) – Senate Minority Leader Chuck Schumer, D-NY, Maria Cantwell, D-Wash., and Ed Markey, D-Mass. – introduced the MIND ACT in Congress to address concerns surrounding the rapid advancement of neurotechnologies.

headbands for meditation or to trigger lucid dreaming, EEG-enabled headphones, and apps that track brainwave signals to calm your mind. Since these consumer products aren't classified as medical devices, many share data with third parties, often without explicit user consent.

- Cooley attorney and partner Kristen Mathews urged BCI companies to get involved as part of this conversation, because “they are among the stakeholders” and “will want to be at that table to contribute toward the FTC report.”

Currently, most federal and state privacy laws offer minimal protection for neural data, Arnold & Porter attorneys Kristina Iliopoulos and Nancy Perkins wrote in a July 22 advisory.

When HIPAA Kicks In

The Health Insurance Portability and Accountability Act (HIPAA) protects neural data only when it is received or created by HIPAA-covered entities, such as health providers, health plans or business associates.

Mathews explained that HIPAA supersedes state privacy laws for neural data collected by medically used BCIs, like those being developed by companies such as Neuralink, Synchron, Precision Neuroscience, and INBRAIN, when used in a clinical workflow and for patient care. During clinical trials, data regulation is governed by a combination of HIPAA, US Food and Drug Administration rules, approved trial protocols, and informed consent forms.

However, if such products were to become commercially available and sold directly to a consumer in the future, HIPAA would still apply when a HIPAA-covered entity is involved in the surgical procedure or ongoing care. But certain state laws would also be triggered, she said.

California, Colorado, Montana and Connecticut Neural Data Privacy Laws

Most state consumer privacy laws reference “sensitive personal information,” but neural data is not always explicitly included. Mathews noted that neural data presents unique privacy challenges, as it can reveal detailed insights into a person's mental and physical health, emotional states, personality traits and risk behaviors.

Of the four states mentioned that have enacted neural data privacy laws, each has a nuanced approach:

- All four states broadly define “neural data” as information generated by measuring nervous system activity.
- Colorado includes neural data under “biological data,” while Connecticut includes data from the central nervous system, but not the peripheral nervous system.

- California's SB 1223 amends the California Consumer Privacy Act to cover neural data, and Montana's MGIPA (Montana Genetic Information Privacy Act) has been amended to include neural data.

Consent requirements also vary:

- Colorado requires opt-in consent for the collection and use of neural data.
- California's CCPA grants consumers a limited right to opt out of the use and disclosure of their neural data.

The MIND Act: Federal Efforts To Address Neural Privacy Data

In late September, three [US Senators](#) – Senate Minority Leader Chuck Schumer, D-NY, Sen. Maria Cantwell, D-Wash., and Sen. Ed Markey, D-Mass. – introduced the MIND Act ([S2925](#)) in Congress aiming to address concerns surrounding the rapid advancement of neurotechnologies.

The bill covers both implantable BCIs covered under HIPAA and regulated by the FDA as well as consumer wellness products that fall under the US Federal Trade Commission oversight. While the senators expressed concern about misuse of neural data across multiple sectors, they also asked the FTC to consider both the benefits and risks of neurotech, Mathews noted.

The MIND Act would require the FTC to conduct a yearlong study, engaging stakeholders to determine if current laws sufficiently protect individuals from harmful neurotech applications and to identify any gaps. After 12 months, the FTC would report its findings to Congress and the public, with \$10m allocated for this effort.

But even if Congress greenlights the MIND Act, it would not impose new rules on businesses or researchers. Instead, the bill simply directs the FTC to study the issue and report back to Congress and the public. The idea, Mathews wrote, is that the effort could spur companies to self-regulate and help shape responsible standards so innovation can thrive safely.

Encouraging Self-Regulation Among Neurotechnology Companies

Mathews urged BCI companies to actively get involved in policy discussions, educate policymakers on their technologies, and advocate for responsible societal implementation. She stressed that when it comes to neural data privacy issues, businesses can shape their own destiny by proactively adopting ethical principles and building trust with consumers. By being proactive, she says, companies can also avoid costly compliance pitfalls as regulations evolve.



Kristen Mathews, attorney with Cooley LLP

The MIND Act builds on earlier efforts by the same senators including a letter in April to the FTC calling for an investigation into neurotech companies’ “handling of sensitive neural data generated by the rapid development and commercialization of brain-computer interface technologies.”

In the letter, the trio urged the agency to take action to protect American’s neural data from “potential exploitation or sale as BCI technologies rapidly advance.”

“Unlike other personal data, neural data – captured directly from the human brain – can reveal mental health conditions, emotional states, and cognitive patterns, even when anonymized,” the senators wrote.

The letter also cites a 2024 report from the [Neurorights Foundation](#) that reviewed 30 consumer companies with publicly available products, including wellness and research-grade products, and benchmarked them against global data protection standards.

The researchers found that “a vast majority of neurotech companies collect users’ brain data with few limits, vague policies, and reserve sweeping rights to share it – often without the individual’s knowledge or clear consent.”

Mathews’ advice for neurotech companies is to develop principles and guidelines to uphold user and patient rights, tailored to their technology, business model and stakeholder interest. The list should consider all the values and interests of the people impacted by the technology. Companies should “commit to living up to those principles ... and in that way provide a model for what legislation could look like.”

