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Generative AI

# When Using AI Leads to "Brain Fry"

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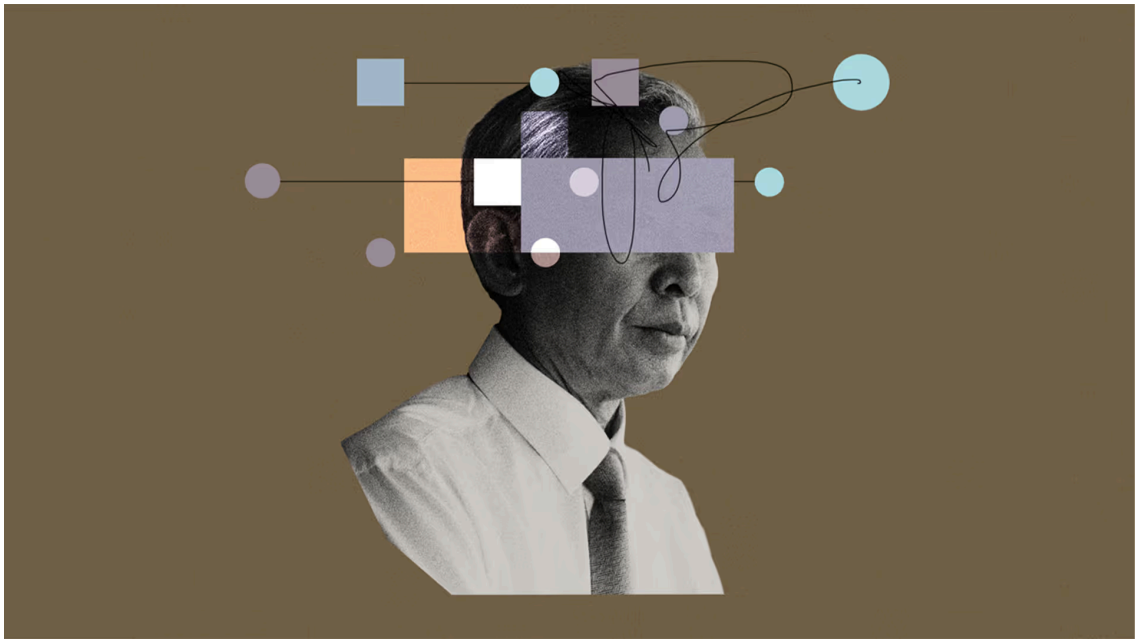

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**Summary.** As firms increasingly incentivize employees to build and oversee complex teams of agents—for example, by measuring and rewarding token consumption as a proxy for performance—people are finding themselves pushed to their cognitive limits.... **more**

**On New Year's Day, programmer** Steve Yegge launched Gas Town, an open-source platform that lets users orchestrate swarms of Claude Code agents simultaneously, assembling software at blistering speed. The results were impressive, but also dizzying. "[T]here's really too much going on for you to reasonably comprehend," wrote one early user. "I had a palpable sense of stress watching it. Gas Town was moving too fast for me."

Gas Town illustrates a growing tension: AI promises to act as an amplifier that will drive efficiency and make work easier, but workers that are using these AI tools report that they are intensifying rather than simplifying work.

This problem is becoming more common. Firms are incentivizing employees to build and oversee complex teams of agents—for example, by measuring and rewarding token consumption as a proxy for performance. Meta, for one, includes the number of lines of code generated by AI as a performance metric for engineers. As enterprises use more multi-agent systems, employees find themselves toggling between more tools. Contrary to the promise of having more time to focus on meaningful work, juggling and multitasking can become the definitive features of working with AI.

Unsurprisingly, workers are finding themselves up against the limits of their cognitive abilities when working this way. In recent weeks, online AI users have described increased cognitive load, "saturated" attention, and mental fatigue in social media posts. Engineer Francesco Bonacci, founder of Cua AI, wrote a popular X post titled "Vibe Coding Paralysis: When Infinite Productivity Breaks Your Brain" in which he lamented: "I end each day exhausted—not from the work itself, but from the *managing* of the work. Six worktrees open, four half-written features, two 'quick fixes' that spawned rabbit holes, and a growing sense that I'm losing the plot entirely."

As a research group that studies emergent workforce and AI trends, these signals caught our attention. The literature is filled with mixed signals on the relationship between AI and worker burnout. (Burnout is as a state of chronic workplace stress consisting of exhaustion, negative feelings about work, and decreased effectiveness on the job.) Some studies suggest that using AI to replace tiring tasks alleviates exhaustion; other studies, sometimes on the same populations, show AI use worsening burnout outcomes. The emergence of acute,

overwhelming mental fatigue with intensive AI oversight—as distinct from burnout—adds new complexity to the picture.

To understand what was going on, we conducted a study of 1,488 full-time U.S.-based workers (48% male vs 51% female; 58% independent contributors vs 41% leaders) at large companies across industries, roles, and levels. We asked them about patterns and quantity of AI use, work experiences, and cognition and emotions.

We found that the phenomenon described in these posts—cognitive exhaustion from intensive oversight of AI agents—is both real and significant. We call it "AI brain fry," which we define as *mental fatigue from excessive use or oversight of AI tools beyond one's cognitive capacity.* Participants described a "buzzing" feeling or a mental fog with difficulty focusing, slower decision-making, and headaches. This AI-associated mental strain carries significant costs in the form of increased employee errors, decision fatigue, and intention to quit.

There's some nuance here, however. We also found when AI is used to replace routine or repetitive tasks, burnout scores—but not mental fatigue scores—are lower. This highlights the subtle-but-important distinction between the types of stress that AI can alleviate, and those that it may worsen.

Our findings are both a guide and a warning. Used thoughtfully, this data can help design AI-driven workflows to diminish burnout. They also point toward specific manager, team, and organizational practices to avoid mental fatigue even as AI work intensifies.

## When AI Use Predicts Mental Fatigue

There's a huge range in how workers use AI today. There's variance across the number of tools used at once, the degree to which AI replaces work vs. augments it, the level of oversight

required, and whether AI has increased or decreased people's overall workload. They might use search agents, research agents, data analysis tools, image generation or design tools, or coding agents. We examined this full range of engagement patterns, alongside cognitive measures, in order to understand the mental impacts of different types of AI use.

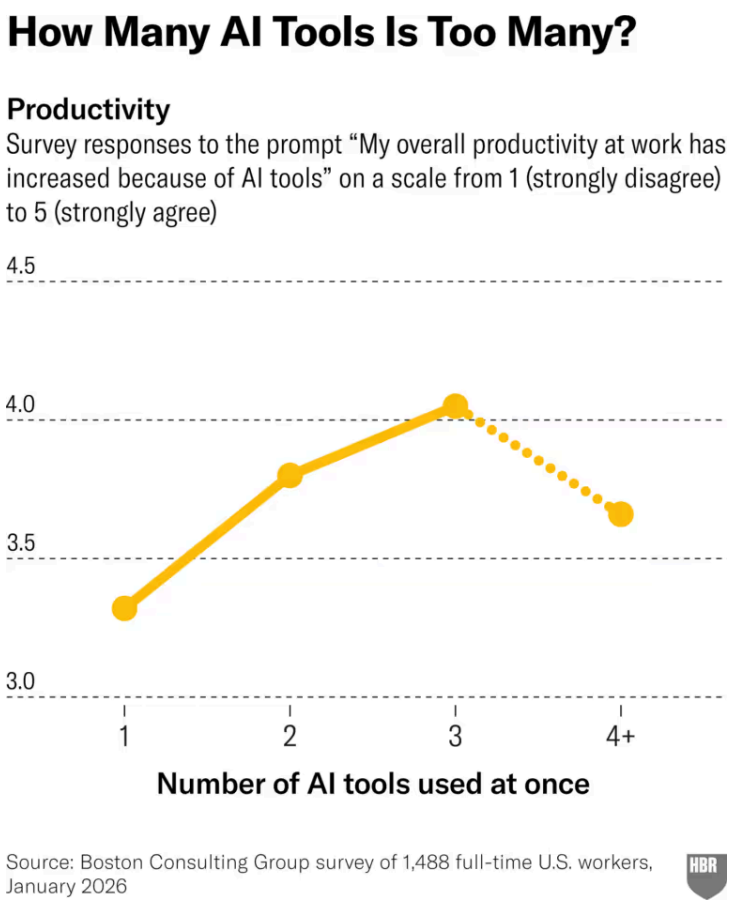
We learned a few important things:

First, we found that the most mentally taxing form of AI engagement was *oversight,* or the extent to which the AI tools required the worker's direct monitoring. The workers in our study who reported that their AI work required high rather than low degrees of oversight expended 14% more mental effort on the job. A high degree of AI oversight also predicted 12% more mental fatigue for participants. Finally, more intensive AI oversight also predicted 19% greater information overload—the experience of feeling overwhelmed by the amount of information one must process at work.

A second important AI-related predictor of both cognitive load and mental fatigue was the extent to which an employee reported that the presence of AI tools has increased their workload. These two factors together—AI oversight and an increase in workload—increase an employee's sphere of accountability, requiring them to pay attention to more outcomes for more tools in the same amount of time. It makes sense that cognitive load increased, and with it, their mental exhaustion.

We also found a fascinating relationship between the number of AI tools used simultaneously and perceived productivity increases. As employees go from using one AI tool to two simultaneously, they experience a significant increase in productivity. As they incorporate a third tool, productivity again increases, but at a lower rate. After three tools, though,

productivity scores *dipped*. Multitasking is notoriously unproductive, and yet we fall for its allure time and again.

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But while AI use often predicted mental fatigue, it didn't seem to predict increased burnout. In fact, use of AI to replace repetitive tasks predicted a *decrease* in burnout.

This may seem counterintuitive, but there's a logic to it. There's precedent in the literature for this separation of burnout from acute cognitive outcomes. Burnout measures typically focus on the physical and emotional dimensions of distress. (E.g., "Is your work emotionally exhausting?") Acute mental fatigue, on the other hand, is caused by marshalling attention, working memory, and executive control beyond the limited capacity of these systems. This is exactly what intensive AI oversight requires.

## Introducing "AI Brain Fry"

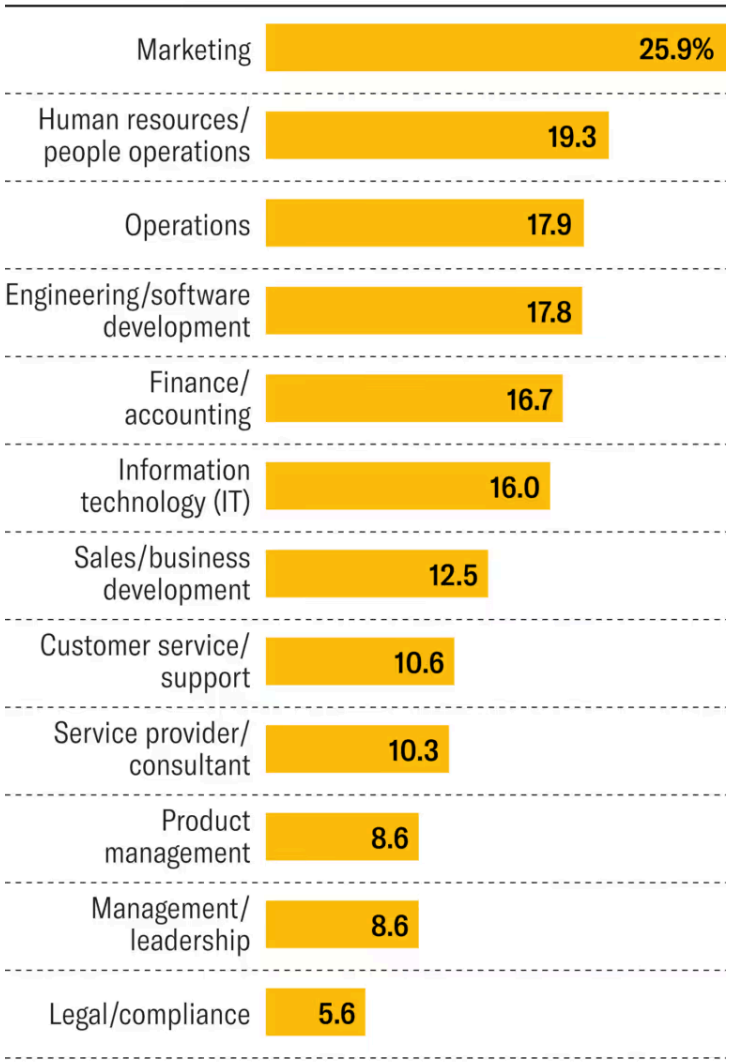
At the end of our study, we asked participants whether they had ever experienced “mental fatigue that results from excessive use of, interaction with, and/or oversight of AI tools beyond one’s cognitive capacity.” In other words, AI brain fry. (We asked this at the end to avoid priming effects. All previous items had separated use of AI from outcomes of interest.) Fourteen percent of participants in our study using AI for work endorsed the experience of AI brain fry.

Prevalence of AI brain fry seemed to vary widely with people’s roles. At the low end, just 6% of those in legal roles reported experiencing it, compared to the high end of 26% of those in marketing roles. After marketing, people operations, operations, engineering, finance, and IT were the functions with the highest prevalence of AI brain fry.

## Which Functions Report Experiencing "AI Brain Fry" the Most?

AI brain fry, defined as "mental fatigue that results from excessive use of, interaction with, and/or oversight of AI tools beyond one's cognitive capacity," was most commonly reported by employees in marketing, HR, operations, engineering, finance, and IT in this sample.

**Employee-reported AI brain fry, by industry role**




Source: Boston Consulting Group survey of 1,488 full-time U.S. workers, January 2026

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But what *is* AI brain fry? Many participants used the words "fog" or "buzzing." They described intensive back-and-forth with the tools, followed by an inability to think clearly, like a mental hangover, comprised of difficulty focusing, slower decision-

making, and headaches, requiring several to physically step away from their computer to "reset."

Consider one senior engineering manager's description: "I had one tool helping me weigh technical decisions, another spitting out drafts and summaries, and I kept bouncing between them, double-checking every little thing. But instead of moving faster, my brain just started to feel cluttered. Not physically tired, just… crowded. It was like I had a dozen browser tabs open in my head, all fighting for attention. I caught myself rereading the same stuff, second-guessing way more than usual, and getting weirdly impatient. My thinking wasn't broken, just noisy—like mental static. What finally snapped me out of it was realizing I was working harder to manage the tools than to actually solve the problem."

A finance director wrote: "I had been back and forth with AI reframing ideas, synthesizing data, forming and organizing the flow of pillars and work…I couldn't even comprehend…if what I had created even made sense…just couldn't do anything else and had to revisit the next day when I could think."

Both of these descriptions are representative of what we heard from other participants. Qualitatively, they point to information overload and task switching as important factors in AI brain fry. Quantitatively, we found strong correlations between AI brain fry and information overload, but a less straightforward relationship with items related to task switching.

### The Business Cost of AI Brain Fry

AI brain fry is more than just uncomfortable. Our data reveals that the cognitive strain created by intensive AI use carries several critically significant business costs as well.

The first is decision fatigue. Perhaps unsurprisingly, when we exhaust our brains with the cognitive load of intense AI work, we

have fewer mental resources available for making high-quality decisions. Workers in our study who endorsed AI brain fry experience 33% more decision fatigue than those who did not. One 2018 study estimated the cost of suboptimal decision making for a $5B revenue firm at $150M per year. A 33% increase in worker decision fatigue could increase that cost by millions of dollars per year.

Likely due to a similar mechanism, we found consistent predictive relationships between AI brain fry and self-reports of both major and minor errors at work. We defined minor errors as "small errors that are easy to catch or correct, such as coding or formatting errors" and major errors as "errors with more serious consequences, such as those that could affect safety, outcomes, or important decisions." Among participants using AI at work, those experiencing brain fry reported making mistakes significantly more often— scoring 11% and 39% higher on the minor and major error frequency measures, respectively—than those who did not.

In many cases, employees using AI with high intensity are today's superstars, talent whom the company must retain. Yet AI brain fry positively predicts an employee's intent to quit. Among workers who did not report AI brain fry, 25% showed active intent to leave. Among those who did report AI brain fry, that rose to 34%. This represents a 39% increase in active worker intent to leave among top users of AI.

### Less Toil, Less Burnout

Not every use of AI results in brain fry, however. We were equally interested in how AI might *alleviate* worker stress. We discovered that when participants used AI to substantially reduce time spent on routine or repetitive tasks, they reported significantly lower burnout scores—15% lower than those who don't use AI in this way.

Again, there's an intuitive logic to this. Repetitive, unenjoyable duties—"toil," as colleagues of ours describe them—constitute ideal targets for AI usage. If we can offload such unpleasant work to AI, we then have more time for more joyful, creative tasks. This is what those employees in our study appeared to do, reporting higher work engagement and motivation scores; more positive emotional associations with AI; and fewer negative emotional associations with AI than others. These participants reported a higher degree of social connection with peers as well, perhaps because they had more time to spend "off keyboard."

This set of findings reinforces the distinction between burnout as a more emotionally driven deficit on the one hand, and AI brain fry as a more acute, cognitive strain on the other. AI can help alleviate emotional exhaustion when its use replaces tasks to allow us time for restorative, positive activities. When, by contrast, our use of AI entails intense mental oversight, our study suggests that use of AI tools may be causing the mental exhaustion itself.

## Manager, Team, and Organizational Practices That Make a Difference

Employees' experience of AI isn't just a question of their own individual choices. We found that team, manager, and organizational practices have a major influence. But which ones matter most for mental fatigue with AI?

At the manager level, workers whose managers take the time to answer their questions about AI had 15% lower mental fatigues scores than those whose managers do not. By contrast, when managers expect that employees figure out how to use AI on their own, their reports have 5% higher mental fatigue scores—a small but measurable AI orphan tax.

For teams, when employees feel team pressure to use AI, we see a corresponding increase in mental fatigue. We observe the same

relationship when there's significant variation in AI use across the team. On the other hand, when teams have organized integration of AI into their processes, team members experience significantly less mental strain. Such integration may represent effective elimination of repetitive tasks as a collective. Group norms can reinforce productive relationships with the new tools just as they can pressure negative ones.

At the organizational level, directionally, practices like providing clear AI strategy and offering training seemed to help. By contrast, when companies don't communicate clearly about AI's role, mental fatigue scores were higher. Similarly, when employees felt that their organization would expect them to accomplish more work due to AI, mental fatigue scores were 12% higher.

This is a critical finding, because most organizational messages about the relationship of workload and AI are implicit rather than explicit. For example, references to increased productivity due to AI may signal the intensification of work. Labeling ICs "managers" of agents similarly indirectly denotes an increase in one's level of responsibility.

In this context, it becomes increasingly essential for organizations to balance messages of AI-boosted efficiency with communication about the mental wellbeing of workers. Employees in our study who feel their organizations value work-life balance had 28% lower mental fatigue scores than others. These signals matter, too—tremendously so.

## Lessons for Leaders

AI can help employees work faster, think bigger, and innovate more. In the process, we're seeing that it can produce cognitive overload, with its attendant personal and business consequences. Our findings suggest that the difference between the two is not

how much AI an individual uses, but how workers, teams, leaders, and organizations shape its use. Some lessons for leaders:

**Redesign jobs, work, and tools holistically for human + AI responsibility.** AI oversight cannot simply be layered on top of human oversight; nor can AI agents be stacked on one user ad infinitum. Just as we have norms for spans of control for managing humans, so, too, limits need to be defined for human + agent oversight and for agents alone. Our research suggests adverse productivity gains after the use of three AI agents at the same time. By contrast, when teams embed AI deeply in their workflows, and treat the technology as a collective capability rather than an individual differentiator, cognitive burden diminishes. Moreover, those designing new AI tools should do so with neurobiology in mind. Tools that require less intense attention or working memory, which instead support creative mind wandering, foster social engagement, or scaffold skill development can produce even more business value but sustainably, while encouraging innovation, fostering growth, and sparking joy for users.

**Set explicit expectations about AI and workload.** When organizations celebrate "productivity gains" without clarifying workload implications, employees interpret this as work intensification. That ambiguity alone may increase stress. Leaders reduce strain when they clearly define AI's purpose in the organization, articulating how it reshapes role scope, setting guidance around oversight, and clarifying how workload will evolve. A full 70% of AI transformation efforts should be devoted to people and processes, providing the right clarity for employees to thrive.

**Shift metrics from activity—and intensity—to impact.** Incentivizing quantity of use will lead to waste, low quality work, and unnecessary mental strain. Start from a clear, strategic north star business objective, with measurable outcomes. Exercise caution in responding to efficiency innovation. Don't rush to

backfill work recently automated by an ingenious worker; doing so immediately will feel punitive and disincentivize further innovation.

**Develop worker skills related to managing AI workload.** As the senior engineering manager indicates above, some individuals are "working harder to manage the tools than to actually solve the problem." In our work with software developers, we've found that the ones who are most advanced with AI start to feel blocked in progress unless they can develop critical new skills such as problem framing, analysis planning, and strategic prioritization. These types of skills can be built through worker upskilling as a means to reduce a plethora of new, unnecessary AI work. Just because a worker can keep iterating with AI at a low marginal cost does not mean they should.

**Strategically deploy human attention as a finite resource.** Some of the most valuable human skills today, including discernment, decision making, and strategic planning, require focused attention. While burnout has become a point of concern in many workplaces, mental fatigue is more likely go undetected in existing workplace surveys. Organizations should evolve people analytics measures to monitor cognitive load overall, and safeguard against mental fatigue with AI use as a novel job-related risk. Cultures, teams, and leaders that prioritize cognitive thriving can expect to see better judgments, fewer errors, and higher retention rates for top talent.

AI brain fry reveals just how quickly and powerfully the new tools can impact our brains as we use them. Next we must learn how to apply that same power toward positive human and business outcomes alike.

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## More Resources

- “AI Doesn’t Reduce Work—It Intensifies It”
- “How Much Time and Energy Do We Waste Toggling Between Applications?”
- “AI-Generated “Workslop” Is Destroying Productivity”
- “Why People Create AI “Workslop”—and How to Stop It”
- “How People Are Really Using Gen AI in 2025”

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