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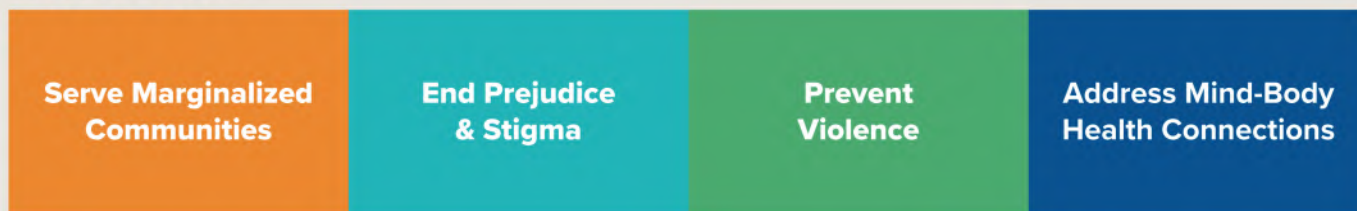
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VOLUME 57 | NUMBER 4

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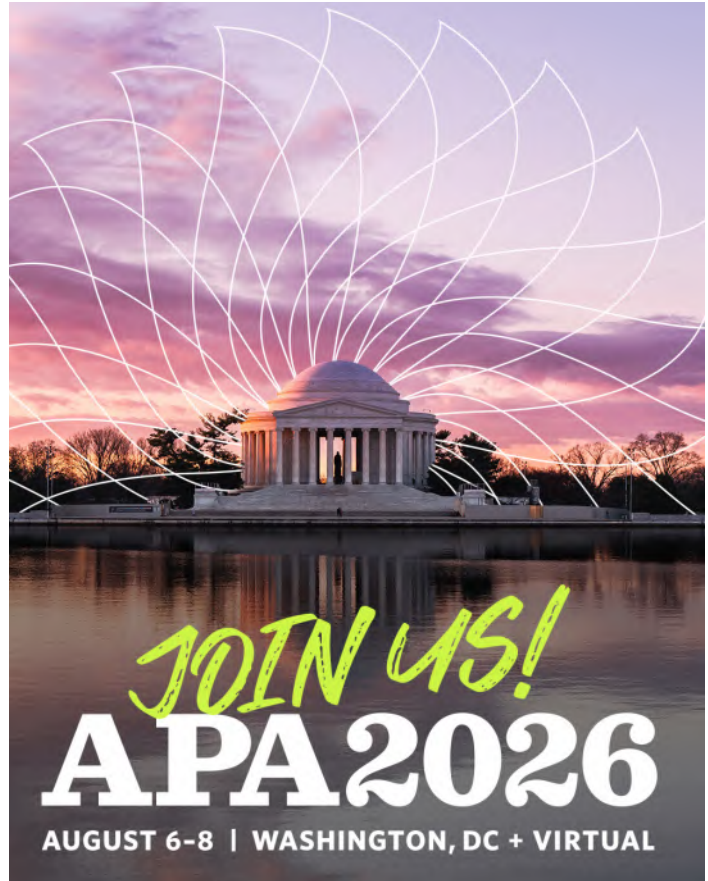
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The Hot List

Resources, opportunities, and news
for psychologists from APA



APA 2026

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Back by popular demand! The APA Office of Continuing Education is thrilled to invite you to attend our in-person Preconvention Continuing Education Workshops in Washington, D.C., on Aug. 5. These 3-hour intensive trainings are designed to keep professional psychologists on the cutting edge of practice, education, and science. Register for APA 2026 as well as the Preconvention CE Workshops at convention.apa.org.



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Discover What's Next at the BIG Booth

Visit the APA Business Innovation and Growth (BIG) booth at APA 2026 to learn how new initiatives are opening opportunities for psychologists across the profession—from continuing education and resources that will strengthen your practice to new ways psychologists are contributing to technology, workplaces, and broader human well-being. We're setting out to make a BIG (yes, we meant that one) impact by further connecting psychological science with real-world challenges and opportunities. To learn more and get involved, stop by our booth at APA 2026 or visit workplacewellbeing.apaservices.org.

CAREER PATHS

Coaching Connections

Are you looking to gain clarity about your career path and develop a concrete action plan for your future? These 1-hour in-person career coaching sessions, exclusively available to All Access APA 2026 attendees, are designed to support participants at all career stages in achieving their professional goals and enhancing their leadership skills. NEW: Group coaching sessions are available! Come visit us at Booth 603. Register in advance at convention.apa.org/coaching-connections.



A CASE TO WATCH

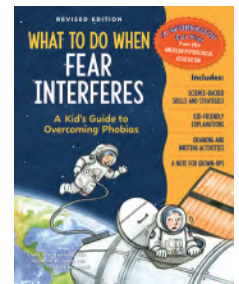
Is Talk Therapy Speech or Conduct?

In an 8-1 decision, the U.S. Supreme Court ruled that Colorado's law banning "conversion therapy" on minors may violate mental health professionals' First Amendment right to freedom of speech. APA is deeply concerned by this ruling. Prior to the hearing, APA filed an amicus brief in the case, *Chiles v. Salazar, et al.*, presenting the court with the scientific evidence that "conversion therapy" is unethical and ineffective, and therefore not a legitimate therapeutic practice. For more information see www.apa.org/news.

MAGINATION PRESS

Fighting Kids' Phobias

Many children experience everyday anxieties as part of development, such as fear of spiders, heights, or loud noises. But when fear interferes with daily functioning, it's time to take action. *What to Do When Fear Interferes* is an engaging and interactive guide that helps kids recognize their fears and build the confidence to cope with them effectively. Written for children ages 6 to 12, this book offers step-by-step tools based on cognitive behavioral therapy to help them manage anxiety. A companion guide for parents and caregivers is included to help support children effectively. Find the guide and other titles at www.apa.org/pubs/magination.



ESSENTIAL LISTENING

What Goes Viral and Why?

In this *Speaking of Psychology* podcast episode, Jonah Berger, PhD, discusses why some ideas, products, news stories, and trends spread like wildfire while others disappear. The science of what catches on and the psychological forces that drive word of mouth, including social currency and high-arousal emotions like awe and anger, are key to understanding this phenomenon. Berger also touches on what his research can tell us about the spread of misinformation. Listen to this and other episodes at <https://www.apa.org/news/podcasts>.

SELF-PACED ONLINE LEARNING

Adapting to the Ever-Changing Workplace

Work today is fast-moving, emotionally demanding, and shaped by constant change. This APA learning guide helps professionals build the emotional awareness, resilience, and interpersonal skills needed to navigate evolving workplace dynamics. Through short, focused microlearning lessons grounded in psychological science, participants gain practical strategies to manage stress, regulate emotions, collaborate across differences, and foster respectful, inclusive work environments. To find this and other courses, visit <https://www.apa.org/education-career/training>.

June 2026



48 Genetic Testing Drives Interdisciplinary Collaboration in Patient Care

Providers increasingly rely on counselors and psychologists to address patients' anxiety about uncertainty in genetic results.



56 The Road to Adulthood

Psychologists around the world are studying how best to support young people during emerging adulthood, the growing gap between adolescence and maturity.



38 The New Science of Sleep *(cover)*

Sleep researchers are learning more about the complex relationships between sleep and mental health—and finding new ways to treat insomnia.

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CONTINUING EDUCATION

Behavioral Treatments for Tourette's Disorder and Tics

Chronic tic disorders are marked by repetitive, uncontrolled movements or vocalizations that can range from mild to disruptive and are sometimes painful. These tics are neurobiological in origin, but the first line treatment for tics and Tourette's disorder—a condition marked by both vocal and motor tics—is behavioral (see page 32).



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Adulthood Unmoored: Psychology for the Overwhelmed

The way we've organized modern life has made adulthood feel impossible to navigate. What repercussions does this chronic overwhelm have on the body and the mind, and how can we address it?

The Aging Paradox: Loss, Growth, and Psychology's Essential Role

Aging is a period of profound transitions. In this Headline Event, psychologists confront the complexities of aging and explain how people can create meaning, maintain connections, and move through this phase of life with their dignity and wellbeing in tact.





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APA2026

Building Radically Well Futures

The Youth Mental Health Summit aims to put young leadership to work

BY WENDI WILLIAMS, PhD



Dr. Wendi Williams is the 2026 APA president and principal consultant at WSW Consulting Services, where she advances equity-driven leadership through psychology-informed consultation rooted in Black Women's Liberatory Leadership Praxis.

"The children are always ours, every single one of them, all over the globe; and I am beginning to suspect that whoever is incapable of recognizing this may be incapable of morality."

JAMES BALDWIN, *THE NATION*, NOV. 1, 1980

BALDWIN'S WORDS, written over 4 decades ago, speak with urgent clarity to the work before us today. The mental health of our young people is not simply a matter of individual well-being; it is the wealth of our collective future. How we nurture, support, and listen to our youth today will determine the character and capacity of the leaders who will shape our world tomorrow. The Youth Mental Health Summit (YMHS) initiative, led by Erlanger Turner, PhD, and Celeste Malone, PhD, is a strong step in that direction.

The YMHS recognizes that young people are not merely future leaders waiting in the wings; they lead in the present moment, providing opportunities for us to be humble enough to follow. Yet for them to lead with wisdom, compassion, and resilience, they must be respected, their leadership cultivated. They must be nurtured and enriched from childhood through environments that affirm their worth, protect their minds, and expand their sense of what is possible.

Too often, decisions about the systems and structures in which young people are educated and reared are made without their voice at the center.

This is a profound missed opportunity and one that YMHS intends to rectify. Youth carry practical wisdom forged from lived experience, wisdom that must actively inform our policies, our practices, and our recommendations. They understand, from their interiority, what it feels like to move through the world our decisions have built. That knowledge is irreplaceable, and we have an obligation to seek it out.

With the YMHS, we are doing precisely that. Rather than designing wellness frameworks *for* young people, YMHS builds them *with* them. YMHS directly engages our youth to understand, from their own perspective,

what conditions would foster a genuine sense of safety and comfort—the foundational bedrock upon which well-being is built. Through YMHS, their answers are not supplementary data; rather, they are the blueprint for informing policy recommendations that shape the context of their lives and our collective future.

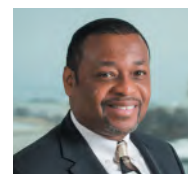
For all of us to be well, across communities and across generations, we must recognize that the children are, indeed, always ours. Investing in their mental health, and centering their voices in that work, is among the most morally serious commitments we can make together. Radically well, together! ■

The Youth Mental Health Summit aims to nurture and support our youth to help determine the character and capacity of the leaders who will shape tomorrow.



Rethinking the Model of Psychology Training

BY ARTHUR C. EVANS JR., PhD



Arthur C. Evans Jr., PhD, is the chief executive officer of APA. You can follow him on LinkedIn. [in](#)

THE 1949 BOULDER CONFERENCE established the scientist-practitioner model that has long guided the training of health services psychologists. Its core premise, that practice should be grounded in science, remains a defining strength of our field. But the world psychologists are preparing to enter has changed in fundamental ways, raising an important question: has our training model kept pace?

The pressures are not new, but they have accelerated and converged. Health care financing is shifting from fee-for-service to value-based and integrated care models, requiring a deeper understanding of financial risk and clinical outcomes. Population health has reframed the goal of mental health care, moving beyond only treating individual illness toward proactive system-level interventions that improve mental health across communities. At the same time, demographic changes are reshaping both the populations we serve and the students entering the profession.

Artificial intelligence is amplifying all these trends. AI is increasingly capable of performing structured tasks central to psychological practice, including aspects of assessment, treatment planning, and psychoeducation. This does not diminish the importance of psychologists but does sharpen a central question: What is the distinctive contribution of a health services psychologist in an AI-augmented system of care?

Part of the answer lies in what has always made doctoral-level training in psychology so valuable. In my experience leading large public behavioral health systems, psychologists played critical roles navigating complexity, applying science in real time, and designing interventions at scale. These contributions were high value and often unique. Yet these capabilities were often developed on the job rather than intentionally cultivated through training grounded in science.

This raises a broader issue that predates the evolving health care financing landscape, demographic changes, and AI, but is now more urgent. If the world psychologists work in is changing so

rapidly, and our traditional roles are evolving with it, should we reconsider how we train the next generation?

The Boulder model has served us well. But honoring its legacy may require us to do what its architects did: Step back, examine the realities of our time, and design training for the world psychologists will inhabit. What does it mean to be a health services psychologist in this evolving landscape? Are we preparing trainees for the work they will do, or the work we have traditionally done? Does our current model equip psychologists to lead in a population health framework and an AI-enabled system of care? And if not, is it time to begin envisioning a Boulder 2.0? ■

As AI reshapes psychological practice, the field faces an urgent question: Are we training psychologists for the work they will do, or the work we have always done?





New Releases from APA Books



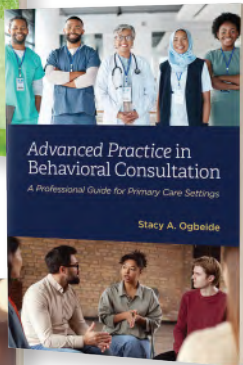
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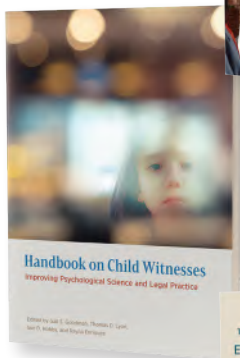
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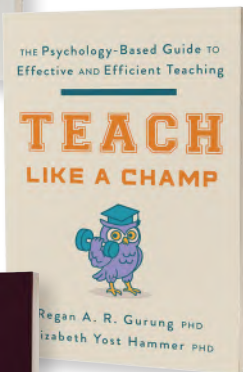
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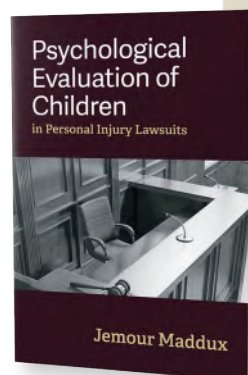
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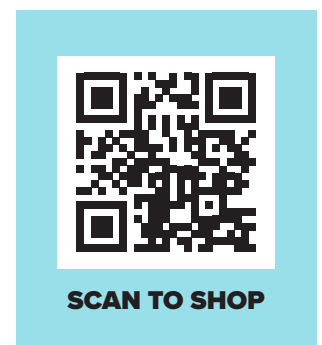
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In Brief

COMPILED BY ANNA MIKULAK, PhD

Prompting ethical reflection may help dampen people's willingness to share false headlines online.



Ethical reasoning may curb desire to share 'fake news'

When people are required to think about the implications of sharing headlines from fake news articles, they see sharing them as more unethical and are less inclined to share them, according to research in *Journal of Experimental Psychology: General*. Across five online experiments, 2,509 social media users in the United States and the United Kingdom read a series of news headlines that were clearly fake. For each headline, they wrote about whether sharing it on social media would be ethical or unethical and then rated how ethical sharing it would be. Engaging people in the reasoning process was key to influencing their intentions; simply rating the ethics of sharing it did not make people less inclined to do so. The dampening effect of ethical reasoning on people's inclinations to share applied across topics, from business to politics, and was greater for headlines that aligned with participants' political beliefs. In other words, after considering ethics, participants were less inclined to share fake news even when it supported their own political values. The researchers suggest that engaging people in moral reasoning may help dissuade them from knowingly spreading misinformation online.

DOI: 10.1037/xge0001887

How does procrastination change as we mature?

Procrastination is an everyday phenomenon—most people have deliberately put off studying for a test, completing a chore, or submitting a payment to their detriment. To understand how this tendency changes with age and time, researchers examined procrastination's patterns, correlates, and consequences using data from a longitudinal study of German youth. The sample included 3,023 participants at the beginning of the study in 2002, 1,229 of whom remained in the study 17 years later in 2019. The results, published in the *Journal of Personality and Social Psychology*, suggest that the tendency to procrastinate decreased during young adulthood and was associated with trait conscientiousness and neuroticism over time. Overall, people who were inclined toward procrastination tended to enter the workforce later and were less likely to obtain a university degree, get promoted at work, have children, or be in a stable relationship. Future studies can shed light on how cultural, economic, and structural factors interact with individual factors to shape procrastination over time.

DOI: 10.1037/pspp0000591

📷 Kids value friendship give-and-take more with age

While kindness is a common feature of most friendships, true friendship depends on a sense of mutual give-and-take. Research published in *Developmental Psychology* suggests that this concept of friendship as reciprocal develops throughout childhood. Across two experiments, 236 participants 4 to 8 years old learned about fictional children who engaged in prosocial behaviors such as sharing and helping. When asked which fictional pair would become



📷 As children grow, they increasingly see friendship as a reciprocal exchange rather than one-sided kindness.

better friends, younger participants favored the pair in which one child always received the prosocial behavior. However, this assessment seemed to shift with age, and participants 7 and older reliably favored the pair in which both children engaged in prosocial behavior. The findings suggest that our thinking about friendship and its key components may evolve from early to middle childhood, with mutuality becoming more important with age. Future studies can shed light on the underlying motivations and cultural values that shape children's concepts of friendship over time.

DOI: 10.1037/dev0002147

Working with resilient colleagues may have downsides

Working alongside particularly resilient coworkers may lead people to feel either more anxious or more inspired, thereby affecting their attitudes toward stress and their own work performance, according to findings in the *Journal of Applied Psychology*. The research suggests that social comparisons—whether we perceive ourselves as being similar to or different from our colleagues—shape how we interpret workplace behavior. In one online study, 320 working adults recalled a time when a colleague showed high or low resilience. In general, people who

recalled a highly resilient colleague reported feeling more inspired than those who recalled a colleague with low resilience. However, participants reported more anxiety when they recalled a highly resilient colleague who they perceived as being different from them. Another online study with 301 real-life colleague pairs extended these results: Observing a resilient colleague was linked with higher inspiration, more positive stress mindset, and more adaptive work performance. However, participants who observed a dissimilar colleague's resilience reported more anxiety, a less positive mindset about stress, and less adaptive performance.

DOI: 10.1037/apl0001369

Virtual and in-person juries may deliberate in similar ways

Court systems are increasingly using video platforms like Zoom to conduct jury trials, but do these virtual jury panels function similarly to in-person jury panels? To find out, researchers conducted a mock jury study with 317 adults. Participants watched a scripted, videotaped trial about a car accident and then deliberated with their peers, either in person or online. According to post-deliberation surveys, in-person and virtual jurors had much in common—they were knowledgeable about the case and came to similar conclusions about guilt and compensation. Despite these similarities, virtual jurors reported using more cognitive effort to decide the case. Analyses of the deliberations indicated that in-person juries had more interruptions and discussed more topics. The findings, published in *Law and Human Behavior*, suggest that key features of jury deliberation may be similar across in-person and virtual juries; however, the researchers note that the study conditions

diverged from real-life trials in several substantive ways, including the short duration and the use of a taped instead of live trial. For more on the research and legal implications of online versus in-person juries, see “Judicial Notebook” on page 31.

DOI: 10.1037/lhb0000643

Views on aging may affect how we remember to remember

Prospective memory, the ability to set a future intention and remember to act on that intention later, supports many facets of everyday life, from scheduling appointments to taking out the trash. Some studies suggest that prospective memory declines with age, but it is unclear whether our beliefs about aging and memory also play a role. In this study, 183 adults 41 to 85 years old

used a smartphone app that instructed them to remember and complete certain everyday tasks at a specific time or in response to an event. The results, published in *Psychology and Aging*, showed that holding negative beliefs about aging in general and holding positive views about one's own aging were both linked with better prospective memory, as measured by completion of the tasks. When asked to subjectively rate their own prospective memory, participants who had more positive views about their own aging tended to rate their prospective memory ability as stronger. Longitudinal studies can clarify how links between different types of aging-related beliefs and prospective memory interact and change with age.

DOI: 10.1037/pag0000955



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📺 Political engagement brings emotional ups and downs

Engaging with political issues is linked with large swings in emotional states, which are, in turn, linked with greater anxiety, according to two experience-sampling studies. The findings, published in *Emotion*, clarify the emotional dynamics of engaging with politics. In one study, 138 U.S. residents completed up to 23 online questionnaires in the 8 weeks following George Floyd's murder in 2020. For each questionnaire, they wrote about their activities of the preceding 2 days; they then selected three specific events and rated the emotional pleasurable and intensity of each one. They also completed measures gauging symptoms of anxiety and depression. About 42% of

participants mentioned the George Floyd protests at least once; when they mentioned the protests, they tended to have larger emotional swings, measured by experience sampling throughout the days. Over time, participants' political engagement—including attending demonstrations, donating to charities, and participating in political conversations—was linked with emotional fluctuations, which were associated with greater anxiety. Another online study conducted in 2024 indicated that people with more extreme political views also had larger day-to-day changes in emotion. According to the researchers, the findings suggest that our political lives may affect our emotional lives in ways that compromise well-being.

DOI: 10.1037/emo0001650

📺 Political involvement may be associated with heightened emotional variability, which could relate to increased anxiety.



Ideal emotional states vary across countries

The emotions we want to feel and the emotions we actually feel are shaped in different ways by cultural factors, according to a meta-analysis of data from 88 reports and 31,000 participants published in *Psychological Bulletin*. The meta-analysis indicated that people generally want to feel more positive and less negative than they actually feel. In addition, there's considerably more variance among cultures in what people want to feel than what they actually feel. These findings were consistent across research teams, populations, and published and unpublished reports. Cultural differences in perceived ideal affect—such as European Americans valuing excitement and other high-arousal positive states more than East Asian Americans and East Asians do—tended to be stable over time. The researchers note that European Americans, East Asian Americans, and East Asians were the most represented groups in the available data sets; more research is needed to determine whether the same patterns hold in other cultural contexts.

DOI: 10.1037/bul0000499

Choice boosts perceived truthfulness of repeated information

People deem information they have seen before as more likely to be true, especially if they chose to see that information in the first place, according to research in the *Journal of Experimental Psychology: General*. The findings, from eight online studies with a total of 953 participants, expand our understanding of the credibility-boosting effects of repeated exposure and may shed light on how we perceive the content we engage with on social media. In one study,

participants saw a series of 20 topic pairs. Sometimes they could select which topic to learn about; other times it was preselected. After reading a trivia statement about each topic, they learned whether it was true or false. Next, they saw 50 additional trivia statements, some of which they had already seen, and rated how true they were. Participants considered the statement they had seen before as more likely to be true, especially if they had selected the topic. Additional studies suggest selecting information seems to enhance participants' memory for it, which contributes to perceived truthfulness. According to the researchers, these findings may shed light on how we remember the information we choose to see on social media.

DOI: 10.1037/xge0001888

People overlook set size when predicting what others prefer

When we get to choose something from a larger set of options, we are more likely to find something we like. But six online studies in *Psychological Science* suggest people routinely overlook the number of options, or set size, when predicting others' preferences. In one study, 2,001 participants read a scenario about choosing a restaurant dish. Participants who chose a dish from six menu items predicted they would like it more than participants who chose from only two items would. Menu size made no difference, however, when they predicted how much someone else would like a dish. Additional studies indicated that people do take set size into account when it is made salient, such as when they are comparing two sets or considering ranked options within a set. A study involving charitable donations suggested that although people donated slightly more money when they had more charities to choose from, their predictions for what others would donate were similar regardless of the number of charity options.

DOI: 10.1177/09567976251400333

Stimulant medications affect arousal and reward

Stimulant medications are often prescribed as part of treatment for attention-deficit/hyperactivity disorder—but which brain networks do these medications actually affect? To find out, researchers examined resting-state fMRI data from 5,795 children 8 to 11 who participated in the *Adolescent Brain Cognitive Development Study*, 337 of whom were taking a stimulant medication. Compared with children who did not take stimulants, those who did had increased connectivity between sensorimotor regions associated with arousal and salience and parietal memory networks associated with reward-based learning. The results,

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📷 Stronger family connections in adolescence may be linked with greater social connectedness later in adulthood.

published in *Cell*, showed the groups had no observable differences in networks typically associated with attention. Data from a drug trial with five healthy adults provided experimental support for these findings. Intriguingly, stimulant-related differences were similar to patterns associated with physiological arousal and getting more sleep. The researchers conclude that stimulants may help children stay engaged not by increasing attention but by shifting the brain toward a more wakeful and reward-sensitive state.

DOI: 10.1016/j.cell.2025.11.039

Different mental disorders may have common genetic roots

Analyses of genomic data from more than 1 million people indicate

significant genetic overlap across 14 psychiatric disorders. The results, published in *Nature*, suggest that the disorders group into five genomically correlated clusters, which the researchers defined as schizophrenia and bipolar disorders, internalizing disorders, compulsive disorders, neurodevelopmental disorders, and substance use disorders. Examining these associations in more granular detail, the researchers identified common and divergent genetic correlates and biological pathways across disorders. For example, the schizophrenia and bipolar disorders cluster was linked with genes expressed by excitatory neurons, while the internalizing disorders cluster was linked with genes

expressed by oligodendrocytes, which help regulate excitatory neurons. The findings shed light on the shared genetic roots of many psychiatric disorders and provide context for the fact that some mental health conditions, such as depression and anxiety, often co-occur.

DOI: 10.1038/s41586-025-09820-3

📷 Teens' family ties linked with social connection as adults

Family relationships during our formative years may have long-term social impacts, according to data from 7,018 participants in the *National Longitudinal Study of Adolescent Health*. As teens, the participants answered questions that gauged the degree to which they felt connected

to and cared for by their family; as adults, they answered questions that assessed the structure, support, and quality of their social relationships. The findings, published in *JAMA Pediatrics*, indicate that family connection during adolescence was linked with social connection up to 2 decades later. High social connection in adulthood was much more common among participants who had high levels of family connection as teens (39.5%) than those who had low levels of family connection as teens (16.1%). Although the findings do not provide evidence for causal links, they suggest that early family relationships may have implications for social connection and well-being in adulthood.

DOI: 10.1001/jamapediatrics.2025.5816

Life span stress may increase mortality risk for Black adults

Greater cumulative stress and higher levels of inflammation partially account for Black adults' increased risk of death relative to White adults, according to longitudinal data from 1,554 participants in the *St. Louis Personality and Aging Network Study*. The findings are published in *JAMA Network Open*. To measure cumulative stress, researchers assessed participants' exposure to childhood maltreatment, lifetime trauma, stressful life events, major experiences of discrimination, and aspects of socioeconomic status. The researchers also measured blood serum levels of C-reactive protein and interleukin-6, both indicators of inflammatory response. Both lifetime stress and inflammatory

response were higher for Black participants than White participants, and these two measures accounted for 49.3% of the disparity in mortality between Black and White participants. These findings provide support for the weathering hypothesis, which suggests that exposure to various types of discrimination contributes to stress and, ultimately, worse health outcomes for Black individuals.

10.1001/jamanetworkopen.2025.54701

Older adults' thoughts may be more vivid than those of younger adults

Older adults in two studies reported autobiographical thoughts that were more specific, concrete, and detailed than those reported by younger adults. The findings, published in *PNAS*,

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contrast with patterns reported in previous cognitive aging research. In one study, 3,847 participants ages 18 to 89 received prompts at random times via a smartphone app. Each prompt included a brief survey assessing what they had just been paying attention to, including thoughts/memories, external perceptions, and bodily sensations. While older adults reported a lower proportion of autobiographical thoughts overall than younger adults, the thoughts they did report were more specific and vivid, less self-focused, and more emotionally positive and social in nature. However, when the researchers assessed participants' thoughts and memories via structured, lab-based interviews, they found age

discrepancies that mirrored those found in previous studies. These findings suggest that naturalistic methods that capture thinking in real-world settings may provide new insights into cognitive aging.

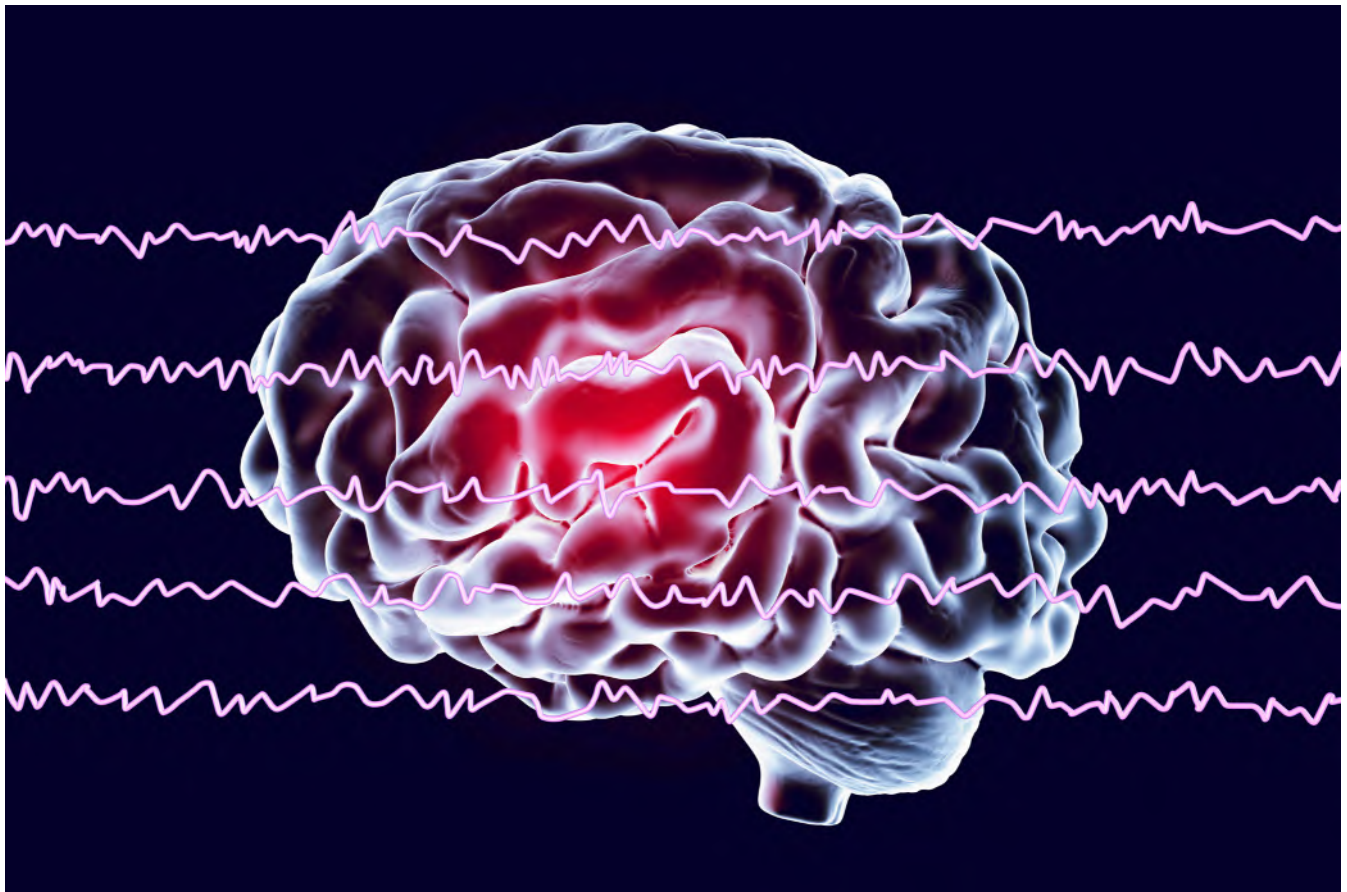
DOI: 10.1073/pnas.2513990123

📺 **Mind blanking may reflect brief gaps in mental content**

We all have brief moments when thoughts seem to vanish, but what is happening in the brain when the mind goes blank? Using high-density EEG recordings, researchers probed participants' mental states—mind blanking, mind wandering, and task-focused states—as they completed a sustained attention task. The results, published

in *PNAS*, indicated that participants had more misses and slower response times on the task while mind blanking, whereas they had more false alarms and faster response times while mind wandering. In addition, brain activity and connectivity observed during mind blanking were distinct from activity and connectivity during mind wandering. Mind blanking was associated with disruptions in visual processing and a relative absence of responses associated with conscious access to visual information. Importantly, researchers were able to use the EEG signatures to predict participants' brain states. The researchers find support for the theory that mind blanking may reflect a mental state

📺 Brief lapses in thought may represent distinct momentary states marked by reduced mental content and altered brain activity.





📷 Confidence gaps may reflect different processes, with anxiety deepening self-doubt over time and gender differences shrinking with reflection.

that is, however briefly, content free; further studies can illuminate whether these findings extend beyond this lab-based context.

DOI: 10.1073/pnas.2510262122

📷 Underconfidence may stem from varied metacognitive sources

Research suggests that women and people with anxiety tend to report lower confidence when rating their own performance on lab-based tasks. But are they underconfident for the

same reasons? Drawing from four online studies with 1,447 participants, researchers developed a computational model to examine the dynamics of confidence in the context of forced-choice tasks. Across the four studies, participants made a series of assessments and rated their confidence in each. The researchers specifically focused on how long it took participants to make their confidence ratings. The results, published in *Psychological Medicine*, indicated that the link between anxiety and

underconfidence became stronger with longer rating times, while the link between gender and underconfidence became weaker. Computational modeling supported the idea that anxiety may trigger biases about performance that get worse with more time for reflection, while women may start with a higher threshold for confidence that they override with more time for reflection.

DOI: 10.1017/S0033291725102808

Across cultures, kids align more with cooperative norms as they age

To understand how cooperation emerges across cultures, researchers studied behaviors related to fairness, trustworthiness, forgiveness, and honesty in 413 children ages 5 to 13 in five societies: urban United States, rural Uganda, rural Canada, rural Peru, and the hunter-horticulturalist Shuar of Ecuador. These societies differed in their modes of subsistence and economic development, factors that may influence behavior and decision-making in uncertain contexts. While children's cooperative behaviors and norms varied across the societies, there were notable developmental trends. In general, younger children showed more self-interested behavior than older children. In addition, children's behaviors and norms tended to diverge toward the norms specific to their community in middle childhood. The findings, published in *Science Advances*, suggest that children's cooperative behaviors can be understood in relation to three distinct strategies—maximization, generic cooperation, and partner-contingent cooperation—that varied across developmental phase and culture. This integrative work sheds light on how children employ and calibrate cooperative behavior across development and cultural contexts.

DOI: 10.1126/sciadv.adw9995

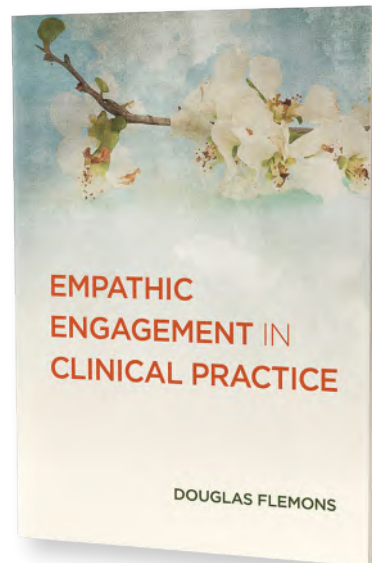
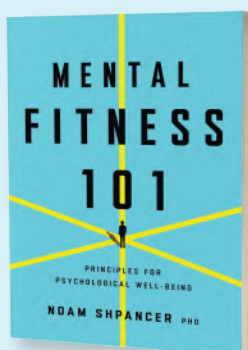
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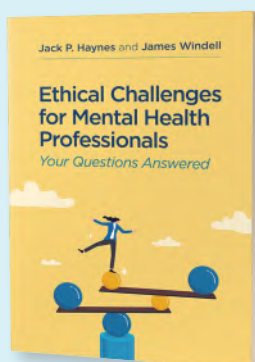
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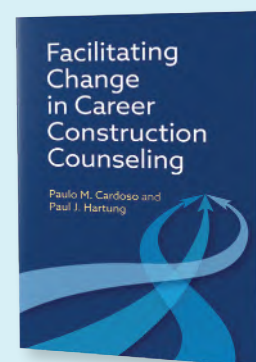
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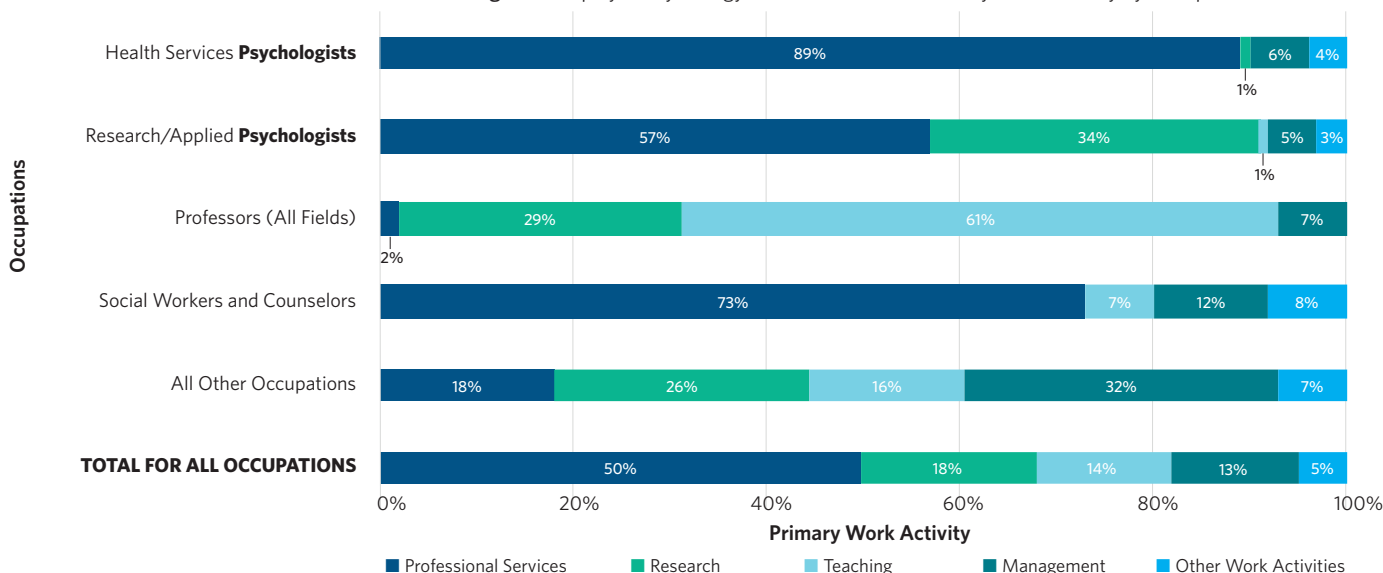
INDIVIDUALS WITH DOCTORAL degrees in psychology engage in varied occupations and diverse work activities. In 2023, psychology doctorate holders were employed in 52 of 129 occupational categories. About 36% worked as health services psychologists, 17% were research/applied psychologists, 15% were professors in any field, and 4% were social workers or counselors. An additional 27% worked in a set of 38 other occupations, including special education teacher, statistician, and multiple leadership positions.

Across all occupations, the most common primary work activities were professional services including health care (50%), followed by research (18%), teaching (14%), management (13%), and other work activities (5%). For many roles, these work activities aligned closely with major career pathways (i.e., health services psychologists, social workers, counselors primarily engaged in professional services, and professors primarily engaged in teaching). Demonstrating how psychology training extends beyond traditional roles, management (32%) was the most

common primary work activity for the “all other occupations” category.

These findings show the breadth of job possibilities associated with doctoral training in psychology and can help job seekers, students, educators, individuals in career transitions, and employers to be more informed about the many careers that people with advanced training in psychology bring to the workforce. These findings also underscore psychology’s value in contributing to direct services, research, leadership, management, and applied problem-solving across sectors.

Figure 1. Employed Psychology Doctorate Holders’ Primary Work Activity by Occupation



SOURCE

American Psychological Association. (2026). *Careers in Psychology* [interactive data tool]. Retrieved Feb. 4, 2026, from <https://www.apa.org/workforce/data-tools/careers-psychology>
 Note: Totals may not sum to 100% due to rounding; estimated counts for each occupation were rounded to the nearest hundred. Examples of professional services include health care, counseling, financial services, and legal services. The “other work activities” category includes computer applications, production, sales and marketing, and work activities not otherwise specified. The underlying data source is the 2023 National Survey of College Graduates public use microdata file and codebook, NSF/NCSES. The use of NSF data does not imply NSF endorsement of the research, research methods, or conclusions contained in this report.

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What Parents Need to Know Before Sharing Their Children's Lives Online

Many parents routinely post photos and other details about their children, but few consider the consequences for privacy, autonomy, and safety

BY EFUA ANDOH

PARENTS HAVE LONG DOCUMENTED the small but meaningful milestones of childhood—wobbly first steps, first days of school, birthday parties, and prom night portraits. These family moments that were once tucked into photo albums and passed around at family gatherings now crowd our social media feeds. *Sharenting* refers to posting one's children's photos, videos, or other personal details online. In a 2021 Security.org survey, more than 75% of parents shared information about their children on social media, and 8 in 10 had social media followers they had never met. Eighty-one percent admitted to using their child's real name on social media, and fewer than 1 in 4 sought their child's consent before posting about them.

A few phone taps can publish children's photos and videos to broad, often public audiences. Some children's

online identities even precede birth these days, pregnancy announcements that include sonograms, for example (Leaver, T., & Highfield, T., *Information, Communication & Society*, Vol. 21, No. 1, 2018). For many parents and caregivers, sharenting offers community, connection, and validation. Yet its reach now extends far beyond the traditional circles of friends and family. In many ways, parents are using tech to meet ancient needs: people's desire to feel connected to kin and community, to mark milestones, and to earn reassurance that they are parenting their children well.

But in today's digital ecosystem, these posts are not just keepsakes—they are fuel for the algorithm. Each image, video, and caption may carry hidden details such as a school logo in the background, a house number on a mailbox, or a geotag in the metadata. This creates a digital breadcrumb trail that carries risks parents may not anticipate in an always-shifting digital environment. Because of the way platforms and bad actors use people's content, everyday family posts can unwittingly become raw material for abuse.

AI has heightened the risks of over-sharing—or even just sharing—online. Children's faces and likenesses are sensitive biometric data that can be scraped from social media posts and used to create deepfakes—AI-generated synthetic media that mimic real images, audio, or video. Even without AI, posts

created through sharenting expose children to significant risks. Technology increases the likelihood of cyberbullying, identity theft, and other forms of data misuse. In 2018, Barclays Bank projected that by 2030, sharenting could represent two thirds of identity fraud affecting young people. The gravity of these possible outcomes has prompted psychologists to examine parents' motivations behind sharenting and how those choices influence children's development and self-concept. Many caution against placing the onus solely on families and instead call on policymakers and platforms to better protect young people's digital futures.

Risk versus reward

A growing body of evidence shows that sharenting often reflects parents' broader social media habits and perceptions of risk. In a survey of 493 U.S. parents of children 10 years old and younger, most routinely posted photos of their children and felt comfortable doing so without their children's explicit consent (Amon, M. J., et al., *Proceedings of the ACM on Human-Computer Interaction*, Vol. 6, No. CSCW1, 2022). Posting frequency was the strongest predictor of sharenting, and parents often failed to distinguish between “regular” photo sharing and posting identifying information about their children. Frequent sharers tended to have larger social

AT A GLANCE

- Parents and guardians who frequently share their children's images and information online—a practice known as sharenting—tend to be aware of the risks but ignore them.
- Rapid technological advancement, including AI, has increased the risks to youth in such areas as cyberbullying, identity theft, and data exploitation.
- While financial and social incentives are tempting, experts advise parents to refrain from posting and instead consider their child's future, safety, and autonomy.



Widespread sharenting fosters a deceptive sense of security, yet it builds a permanent digital legacy. These footprints carry significant privacy risks that parents may fail to foresee.

networks that included people they did not know personally and often underestimated risks such as photo misuse by strangers or future embarrassment for their children.

For many parents, the risk-benefit calculation involves balancing proximal needs, like staying connected with loved ones, with less tangible long-term privacy concerns such as identity theft. Yaniv Hanoch, PhD, a professor of decision science at the University of Wolverhampton in England, examined these trade-offs in a coauthored study of Facebook sharenting among U.K. mothers of young children (Briazu, R. A., et al., *Technology, Mind, and Behavior*, Vol. 2, No. 4, 2021). The perceived benefits of maintaining relationships with distant family frequently outweighed concerns about data privacy.

Participants were also more attuned to immediate risks such as “stranger danger” than to longer-term threats like identity fraud. About 1 in 5 mothers reported negative incidents such as offensive comments, trolling, or regret about past shares. Yet their posting

frequency did not differ from that of mothers who had not had such experiences. Seeing peers and relatives share similar content reinforced the perception that posting about children was both typical and acceptable. “What we learned is not necessarily that people are unaware of the risks,” Hanoch said. “They are engaging despite the risks. They might see their friends, family—all of them—posting, and think, everyone’s doing it—what can happen?”

Additional research on parents’ perception of the sensitivity of their children’s information echoes these findings. In a survey of 418 U.S. parents of children ages 10 and younger, most parents viewed their children’s personal information (such as Social Security numbers, medical history, and fingerprints) as highly sensitive. Surprisingly, fathers in parenting partnerships and as single parents were more likely to perceive their children’s information as sensitive yet more willing to share it with social media marketers (Hoy, M. G., et al., *The Journal of Consumer Affairs*, Vol. 57, No. 1, 2023). The pattern suggests that awareness

of risk does not always translate into more cautious behavior.

Posting for profit

The risk-benefit calculus becomes even murkier when sharenting intersects with financial incentives. Advertisers have created high demand for kid-centric content, leading to the rise of parenting influencers, family channels, and “kidfluencers” who can earn money through sponsorships and brand deals. While not all parenting influencers are guaranteed to make a profit, those with large followings can earn significant income. One estimate obtained by ABC News found a range between \$4 and \$20,000 per sponsored post for creators with 100,000 to 1 million followers. Research shows that sharing more intimate family moments often attracts more followers and engagement, increasing the potential for monetization (Tosuntaş, Ş. B., & Griffiths, M. D., *Journal of Family Theory & Review*, Vol. 16, No. 3, 2024).

This can subtly shift parents’ mindsets. Their posts may become more focused on satisfying “the hungry algorithm,” according to Robyn Koslowitz, PhD, a clinical child psychologist and the educational director of the Targeted Parenting Institute. Algorithms are designed to maximize user engagement, and content that features children often triggers high levels of interaction (Ugwudike, P., et al., *Deviant Behavior*, Vol. 45, No. 4, 2024). When sharenting posts receive high engagement, algorithms are designed to amplify them to a wider audience. This can incentivize parents to post similar content to maintain their reach and influence (Ugwudike, P., et al., *Big Data & Society*, Vol. 11, No. 1, 2024). There is evidence that algorithms may even favor content featuring children who are upset. One recent study found that TikTok videos depicting psychological maltreatment

toward children received significantly higher engagement than other content, raising concerns that such incentives could encourage harmful posts (Stormer, B., et al., *Child Maltreatment*, Vol. 29, No. 4, 2024).

“Algorithms really alter our personalities. Instead of the parent thinking primarily as a parent, they are thinking primarily as a business owner or content creator,” said Koslowitz. When a family’s income is tied to online engagement, the potential for exploitation grows, given that children cannot meaningfully consent. Parents may even frame filming as a way to achieve a family goal, such as funding a vacation, but children are not yet able to weigh those rewards against the long-term costs of public exposure.

This commodification of childhood raises significant ethical questions. While there are laws on the books in various states to protect child performers in film and television—mandating limits on working hours, meal and rest periods, educational requirements, and preservation of a portion of earnings for adulthood—children featured in monetized social media content have few legal protections. Their “employer” is not a studio but a parent who also controls their home life, schooling, and income, creating an inherent conflict of interest.

The case of Ruby Franke—a Utah-based family vlogger convicted of child abuse in 2023—helped spur the enactment of Utah’s H.B. 322 in May 2025. Her daughter Shari Franke reported that her mother coerced her and her siblings into performing acts that would play well on camera, even when they were humiliating—all for audience engagement. H.B. 322 established safeguards for minors involved in social media content creation, including protections from financial exploitation and privacy violations. It also requires

TOOLKIT

TIPS FOR MINDFUL SHARING

Experts share these tips for parents to support healthy online practices that prioritize children’s privacy and dignity.

Pause, don’t post:

- Would this image, video, or text cause concern for anyone if it appeared on a billboard for everyone to see?
- Could this post affect your adult child’s professional opportunities or personal relationships?
- Could this post humiliate or embarrass your child now or in the future (e.g., bathroom accidents, tantrums)?
- Does the post contain sensitive details about a child’s medical, behavioral, or emotional history?
- Does this photo clearly show children who aren’t your own?

Respect boundaries:

- Start asking your child for permission before posting their picture when they are very young. This includes explaining the reason for sharing something, where it will be shared, and who will see it. This also teaches children responsible digital sharing.
- Honor your child’s request to not post or to remove a post immediately, without negotiation or pressure. Communicate these boundaries clearly to friends, family members, caregivers, and anyone who spends time with your family so that everyone respects your child’s comfort and privacy.

Prioritize privacy:

- Use private communication channels—like direct text messages or end-to-end encrypted group chats (e.g., WhatsApp)—for routine family updates instead of public social platforms.
- When using social media, regularly review privacy settings and practice digital sanitation—auditing friends and follower lists to ensure you personally know and trust everyone who can see your posts. Note that social media companies bear no responsibility for your safety or privacy.

Remove identifying information:

- Turn off geotagging on devices and remove metadata from photos before sharing. Don’t post images that reveal location markers (e.g., house numbers, street signs, school logos, team uniforms, etc.).
- Use widely available free photo editing tools such as Google’s Magic Eraser to remove people from your image who have not given their permission to post.

creators who make more than \$150,000 per year from content featuring children to place 15% of those earnings into a trust fund the children can access at age 18.

“Parents who earn income through their children’s online presence are crossing into new ethical territory,” said Fran Blumberg, PhD, a developmental

psychologist and professor in the Graduate School of Education at Fordham University. Many children are performing labor without legal protections. Blumberg suggested that social media platforms establish an ethical code or guidelines to restrict the monetization of child-focused content and the potential violation of child rights.

Sharenting solutions

Experts agree that parents should not be solely accountable for protecting kids online. “Right now, we put all the responsibility on parents to make the right choices online,” said Hanoach. He notes that this approach “assumes people can make purely rational decisions in environments designed to keep them engaged.”

“If I had a magic wand, I would not even approach the parents,” said Hanoach. “I would approach the social network sites, the communication providers, and the policymakers.” In fact, a series of landmark cases against Meta, Snap, TikTok, and YouTube this year will determine whether social media companies, which have been called “digital casinos,” will be held accountable for their addictive properties and forced to change how they are designed.

At a minimum, platforms “should not be allowing photos of minors to be altered and posted” to prevent the creation of manipulated AI content, said Jacqueline Nesi, PhD, an assistant professor of psychiatry and human behavior at Brown University who studies how technology affects children’s mental health. Nesi further argued that platforms must provide more transparency around data and privacy so that both parents and children understand what happens to their information once it is shared.

Pamela Wisniewski, PhD, a principal research scientist at the International Computer Science Institute and an expert on adolescent online safety, suggested that platforms could implement “just-in-time” interventions such as showing a photo’s metadata to the user before its posting and alerting the user if it contains location information, such as a child’s school or home.

She also suggested developing features that could detect when a child is featured in a post and prompt the user

to consider the intended audience or the post’s sentiment. “I imagine there are tons of parents who post something as a cry for help after a frustrating day,” said Wisniewski. Thoughtful design could help route caregivers toward support while reducing potential harm to children. “It could also benefit them to be given some insight from a more objective party in a way that’s less privacy invasive for their children.”

At the family level, Wisniewski suggested sharing decision-making about what gets posted in a developmentally appropriate way. “Consent education needs to be scaffolded,” said Wisniewski. “We don’t want to just start turning over all the autonomy to them at 18. We want to involve them in the decisions along the way so they can begin doing some privacy calculus of what the benefits of posting this are or what the potential drawbacks are.”

Parents can begin nurturing this awareness early by inviting children into small decisions about what to share and why. Even young children who cannot legally consent can offer “assent,” said Keneisha Sinclair-McBride, PhD, a clinical child psychologist and associate chief of integrated behavioral health at Boston Children’s Hospital. “They can’t fully consent, but we should talk to them about it,” she said. “Asking for their assent establishes early habits of respect.” Such conversations should convey that the child’s feelings and emotional boundaries are the priority.

Modeling also plays a central role in scaffolding. Parents who seek permission before posting content—and who explain their reasons for keeping certain details private—are demonstrating what digital ethics looks like. As children mature, scaffolding can expand to include private discussions about online identity and digital footprints. These discussions can also include family media agreements that clarify

boundaries and allow children to withdraw consent if they regret something posted earlier. Through ongoing collaboration, parents prepare their kids to move through the digital world with care. “It establishes a pattern where you’re treating kids with respect and modeling good digital citizenship,” said Pamela Rutledge, PhD, director of the Media Psychology Research Center and a professor emerita at Fielding Graduate University in Santa Barbara, California. “You’re giving them a sense of agency over their own image.” ■

FURTHER READING

Behind the posts: The impact of childhood and cumulative trauma on sharenting behaviors and maternal mental health

Aydogan, M. G., et al.
The Family Journal, 2025

To share or not to share: Adolescents’ experience with sharenting

Peleg, O., et al.
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Roth, S., et al.
In Walrave, M., et al. (Eds.), *Sharenting Practices, Consequences and Protective Measures*, Palgrave Macmillan, 2025

Tell me why: The impact of mindful sharenting explanations by momfluencers: An experimental study with mothers

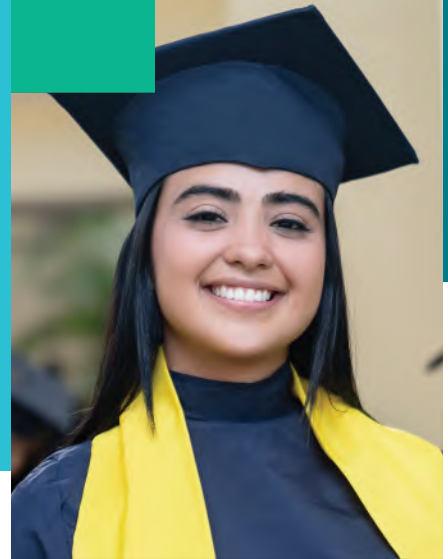
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5 Questions for Erica Force

Sports psychologists help athletes elevate their performance, manage stress, recover from injury, and compete at the highest levels

BY EFUA ANDOH

A **LIFELONG EQUESTRIAN ATHLETE,** Erica Force, PhD, is a licensed psychologist and a Certified Mental Performance Consultant (CMPS) who serves as a lead psychological services provider for the U.S. Olympic & Paralympic Committee (USOPC). A former U.S. Air Force officer and military psychologist, she has worked with military, youth, NCAA Division I, Olympic and Paralympic, and professional athletes. She also serves as a team clinician for the Washington Commanders. With more than 2 decades of experience, she specializes in performance psychology, injury recovery, anxiety, and stress-related concerns. She is certified in animal-assisted therapy and integrates therapy dogs into her clinical and performance work.

You've worked in a wide range of environments, from the U.S. Air Force to orthopedic sports medicine, and now collegiate and professional sports. Where have you felt you've made the most impact?

My hope is always to meet people where they are. Each setting has such different demands, cultures, and types of pressure. For example, when I was in the U.S. Air Force as a military psychologist, my focus was on helping airmen function under extreme stress when the stakes were very real, high, and immediate. I also worked with younger airmen still adjusting to being in the military. That role also involved supporting special operations forces under high pressure and high-stakes conditions. In orthopedic sports medicine, it was all about helping athletes understand their injury and treatment plan, which included helping athletes cope with the shock of injury, providing pre- and postoperative education, understanding the injury rehab process and how to navigate it, and supporting athletes with the return to sport process. In the college setting, it is typically a younger population. I often help athletes balance school, sport, and some kind of social life while they're continuing to grow as young adults and navigate their own identity development. In the professional setting, some of the unique demands many professional athletes experience are related to constant evaluation, feeling pressured by high expectations, and a lack of certainty about the future and job security.

How do you support Team USA athletes as they prepare for the Olympic and Paralympic Games?

Our team supports athletes by helping them in different areas such as managing pressure, uncertainty, and transitions, and making sure they have access to different types of resources. They have access to our internal team of licensed mental health professionals for clinical or performance-related sessions. Or if they want to work with someone outside USOPC, they can choose from our directory of vetted national and international providers. We also provide 24/7 on-call support for emergencies and have mental health emergency action plans in place. Beyond direct services, we look for ways to diversify resources. For example, we partner with platforms like Headspace and Optimize Mind Performance, which provide self-directed support options. On the day-to-day, we build relationships with athletes, coaches, and teams to support them throughout their preparation leading up to and during big events like the Games. That includes helping them manage the pressure of competition, dealing with travel, the stress of selection, and balancing family and social life with periods of separation.

What have you observed that helps or hinders high-quality mental health and performance care for athletes?

Integration is one of the things that helps the most. When mental health and performance services are embedded into a sport environment and team culture is when they are most successful. When



PHOTO BY SCOTT SUCHMAN

leadership, coaches, and medical staff are all buying into them, then athletes see those services as part of the system and trust and use them more. The biggest barrier is disconnection—when mental health or performance support is treated as separate or as an add-on. That separation can make it harder for athletes to trust and access it.

How does being licensed as both a psychologist and a Certified Mental Performance Consultant influence your approach when working with athletes?

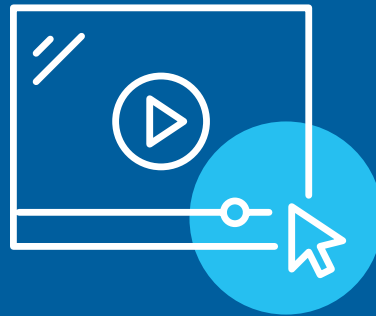
I grew up as an equestrian athlete. I was very interested in how I could perform better and manage my own performance struggles. My interest in mental performance comes from my own sport experience. As I started to think about going to school and navigating this career path, I realized I wanted to have the ability to support athletes in other areas of their life in addition to performance, such as anxiety, family issues, or other stressors. Becoming a psychologist allowed me to address an individual's clinical and emotional needs. Becoming a CMPC gave me tools to work on the performance side. With both, I felt like I could help an athlete with the whole picture, as a whole person. Often, an athlete initially comes in to talk about what they are most comfortable with. It may be sport or performance issues, but once we build trust, other aspects of life emerge and those things are connected. If something isn't going well in sport, it can affect well-being in other areas of their life and vice versa. Having both backgrounds helps me support the whole person and tailor what I provide to whatever balance that athlete needs—more performance focused at times and more clinical at others.

How do you incorporate dogs into your clinical and sport psychology work? What therapeutic or performance benefits have you seen?

I love animals. My sport growing up was equestrian show jumping, and I always had dogs as part of my life. When I was in grad school, one of my supervisors had a therapy dog, which introduced me to the concept of integrating a dog into therapy. While working with airmen experiencing PTSD [post-traumatic stress disorder] in the Air Force in Missouri, the clinic supported me pursuing training with my dog to be certified as a therapy dog team. I also wrote an Air Force instruction that was later approved by our medical commander to integrate this service into our clinic. At Georgetown, where there are 800 student athletes, having a dog helped me to build rapport. While therapy animals are not necessarily an intervention by themselves, when you use them appropriately in therapy with evidence-based care, they can really have some great results.

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Are Virtual Juries Effective?

As caseloads increase and resources dwindle, some courts are using virtual technology for conducting jury trials in civil cases

"Judicial Notebook"
is a project of APA
Div. 9 (Society for the
Psychological Study
of Social Issues).

BY KATHRYN A. LAFORTUNE, JD, PhD, THE UNIVERSITY OF TULSA COLLEGE OF LAW

THE WAY AMERICAN JURORS are chosen and serve has undergone significant change to meet fairness concerns for gender and racial diversity over the years. In 1986, for example, the Supreme Court held in *Batson v. Kentucky* that it was unconstitutional for prosecutors to strike potential jurors based on race, a requirement that was later extended to gender.

Another shift may be on the horizon. Until recently, jury selection has typically required in-person voir dire—the process of questioning prospective jurors to determine if they can be fair and impartial. After the evidence is presented and closing arguments are done, jurors are typically sequestered together to deliberate until they reach a verdict, sometimes 24-hour sequestration for days in high-profile criminal cases.

A practice that began as a COVID-19 necessity has since evolved into a broader trend: Some courts are now turning to virtual technology for civil jury trials to help clear mounting caseloads amid dwindling resources, but not without some valid concerns.

Lawyers worry about exercising their challenges during voir dire without opportunity to observe nonverbal cues and behavior, and whether they can present their case as effectively to jurors watching online. And without sequestration, there are concerns about monitoring the juror environment to assure freedom from distractions and interruptions.

Psychological research has looked at how in-person and virtual modes compare in proceedings such as bail, immigration, video arraignments, and testimony, with mixed results. One significant concern is that potential jurors who lack access to, or experience with, computers and video calls would be excluded.

In-person jury research by psychologist Krystia Reed,

PhD, of the University of Texas at El Paso, and colleagues was halted during the pandemic but then allowed for a quasi-experiment using a virtual platform to compare both jury types in civil trials. Their most recent study tested competing hypotheses on whether in-person civil juries would perform more effectively or less effectively than virtual juries in processes and outcomes by examining attention to information and emotional engagement, deliberation, and diversity (*Law and Human Behavior*, advance online publication, 2026).

They measured attention by testing jurors' knowledge of case facts and perceptions of the parties and measured engagement by assessing overall emotionality, attentiveness, and fatigue. They measured quality of deliberations using the length and topics of jury deliberations as well as the number of interruptions to these discussions.

Their results suggest that both virtual and in-person juries were substantially similar in process and outcomes. Virtual and in-person jurors reported being attentive and engaged throughout the deliberations. Although virtual jurors reported expending more cognitive effort in deciding cases, they did not report fatigue. Both groups reported being attentive and engaged and expended substantial effort. There were limited differences in the nature of the two groups' deliberations in discussion of the parties, and the subjective impressions of both groups were not significantly different. Notably, the two groups also did not differ on most demographic variables.

Reed's study suggests that virtual juries may be an answer to increasing caseloads. While many courts using virtual juries in civil cases report positive experiences, more research is needed on whether attorneys will embrace the format and in what types of cases. ■



AT ISSUE

Can a virtual jury trial format adequately protect all parties' rights to a fair and impartial process?



CE Corner

Behavioral Treatments for Tourette's Disorder and Tics

BY STEPHANIE PAPPAS

CHRONIC TIC DISORDERS are marked by repetitive, uncontrolled movements or vocalizations that can range from mild to disruptive and are sometimes painful. These tics are neurobiological in origin, but the first-line treatment for tics and Tourette's disorder (TD)—a condition marked by both vocal and motor tics—is behavioral.

Comprehensive Behavioral Intervention for Tics (CBIT), a program designed and tested by psychologists and psychiatrists, has been recommended by the American Academy of Neurology as the first-line treatment for TD and other chronic tic disorders since 2019. Randomized controlled trials suggest that behavioral therapy is equally as effective as medication for reducing tic severity, without the potential side effects of medication (Piacentini, J., et al., *Journal of the American Medical Association*, Vol. 303, No. 19, 2010).

"You have to remember that one of the biggest things that tic disorders take away from people who are affected is a sense of predictability and control over their own actions," said Douglas Woods, PhD, a clinical psychologist now at Loyola University Chicago and a CBIT pioneer. "CBIT teaches patients that tics can be effectively managed, and by learning that, patients learn they are more in control over what they do. That can have a very powerful impact on how a person with tics approaches the world."

Access and efficacy remain an issue, however. Experts say that not enough kids and adults with tics have access to CBIT because of a lack of skilled providers. Experts are also looking for improvements, as the intervention is effective only about half the time for kids and less than that for

adults. One persistent question is how to help support the 85% of people with tics who have a comorbid psychiatric disorder such as anxiety and obsessive-compulsive disorder.

Epidemiological studies suggest that about 1% of children and 0.01% of adults experience chronic tic disorders (Yilmaz, A. Y., & Jankovic, J., *Brain Sciences*, Vol. 15, No. 5, 2025). For

that reason, psychologists are wise to be familiar with tic disorders and their treatments. They might also find that they can help patients through referrals to a CBIT provider, by providing psychoeducation on these conditions, or even by becoming trained to provide CBIT themselves.

"We see it in our offices, and we need to know how to adequately address it, we need to know how to talk about it with compassion," said Suzanne Mouton-Odum, PhD, a clinical psychologist at the Baylor College of Medicine in Houston who treats tic disorders. "[Otherwise] we're going to miss the opportunity to help a significant number of people."

Tic basics

Tics can come in the form of uncontrolled motor movements or as vocal utterances. People with only vocal tics or only motor tics for more than 1 year

are said to have persistent or chronic tic disorders.

Although TD is sometimes thought to be the "worst case" of tic disorders, this is a myth. A TD diagnosis simply means a person experiences both motor and vocal tics, which can be anywhere on the spectrum from mild to severe. Tics are most common in children, with an estimated 20% of kids experiencing transient tics that clear up on their own (Black, K. J., et al., *Current Developmental Disorders Reports*, Vol. 8, 2021). Even chronic tic disorders improve

CE CREDITS: 1

Learning objectives

After reading this article, CE candidates will be able to:

- 1 Define tics and describe the typical onset and trajectory of tic disorders.
- 2 Explain the procedure for CBIT, the first-line intervention for tics and Tourette's disorder.
- 3 Discuss the broader environmental context of tics and the importance of considering comorbidities in diagnosis.

For more information on earning CE credit for this article, go to www.apa.org/ed/ce/resources/ce-corner.

KEY POINTS

1

Tics are uncontrolled repetitive movements that begin in childhood and typically lessen or resolve by late adolescence.

2

CBIT works for about half of children and less than half of adults, so current research aims to improve the treatment and elucidate which mechanisms are most important to see a reduction in tic severity and impairment.

with age. A meta-analysis found that 0.77% of kids had TD, which dropped to 0.05% in adulthood (Knight, T., et al., *Pediatric Neurology*, Vol. 47, No. 2, 2012). Although the reasons that tics improve with age are not entirely clear, experts suspect that brain maturation plays a major role.

The specific tic can determine how impactful these disorders are. Some people may have subtle tics that do not interfere with their daily lives. Others may experience tics that cause muscle pain or social stigma. The most stigmatizing tics tend to define the disease in the public imagination, though they are not the most common: The stereotypical TD coprolalia, or inappropriate utterances of obscenities or slurs, occurs in only 10% to 15% of people with TD.

“There are a lot of myths and misconceptions when it comes to tics,” said Joseph McGuire, PhD, a clinical psychologist at Johns Hopkins School of Medicine who specializes in TD. Beyond the stigma, parents often fear their children’s tics are signs of a dangerous neurological condition, such as a brain tumor. Or they may not

realize that most tics improve with age. Sometimes one of the most impactful statements for a family, McGuire said, simply is: “You’re not alone.”

Tics in children

Transient childhood tics are common, with about 15% to 20% of kids experiencing temporary tics that lessen on their own, said John Piacentini, PhD, a clinical psychologist at the University of California, Los Angeles, and one of the pioneers of CBIT.

Tics that last less than a year fall under the diagnosis “provisional tic disorder.” The trajectory of provisional tic disorder is somewhat controversial. Prospective research led by Washington University in St. Louis psychiatrist Kevin Black, MD, suggests that these transitory tics may not be as transitory as they sometimes seem (*Comprehensive Psychiatry*, Vol. 134, 2024). In that study, 98% of 89 kids recruited to a study of children with new tics were still experiencing them a year later. The tics had become less bothersome and clinically relevant, but the finding suggests that previous research may have missed or not counted tics that had diminished in severity but were still present.

Regardless, most kids who experience tics do outgrow them or inhibit them to the point where they are not bothersome without treatment. Thus, the first step for clinicians seeing a child with new tics is often psychoeducation, Piacentini said. Families need to understand that tics typically wane over time and they should be taught ways to avoid accidentally reinforcing tic behavior.

“I’ve seen parents have little kids with tics, and every time the kid tics, the parent will look at the child and try not to cry,” Piacentini said. “The kids see this. Or every time the kid comes

home from school with tics, and the loving parent comes up and [rubs their back] and says, ‘You don’t need to do your homework.’ All of that serves to reinforce the tics.”

Family education may be enough unless the tics are particularly long-lasting or disruptive to the child’s daily life, Piacentini said.

Often, reassuring parents and kids that tics are not a symptom of a dangerous medical condition and that most kids with tics will see improvement as they get older gives families hope, said Christine Conelea, PhD, a clinical psychologist at the University of Minnesota who researches tic disorders.

“We see this in our data,” Conelea said. “Just having education about it makes people feel a lot better.”

A behavioral treatment for tics

For people for whom tics do not ease on their own, there are treatment options. The first is typically CBIT. Medication options may be added after CBIT if disruptive tics remain, Piacentini said. However, medication tends to be most effective on simple tics, said John Walkup, MD, a psychiatrist at Lurie Children’s Hospital and the Northwestern University Feinberg School of Medicine in Chicago who specializes in TD. More complex tics respond better to behavioral treatment because there are more opportunities to disrupt the tic.

CBIT intervention takes place in about eight sessions over 10 weeks and consists of three components. First, the patient learns to be more aware of tics and the premonitory urge, a feeling that sometimes rises before the tic. Second, the CBIT practitioner helps the patient develop a competing response, which is a movement or action that makes it difficult or



Sometimes people will imagine the urge to tic as an ocean wave and let it crest and collapse. Others will anchor themselves to their breath and ride out the urge.

impossible to do the tic. For example, if the tic is jerking one's head back, the competing urge might be to tuck the chin, straighten the neck and hold that position, said Mouton-Odum. The third step is functional intervention, which involves figuring out which situations tend to exacerbate or reinforce tics and changing the circumstances so as not to encourage the tics.

A systemic review of the evidence conducted during the development of practice guidelines for treating chronic tic disorders found that medications and CBIT are similarly

effective in reducing tics (*Neurology*, Vol. 92, No. 19, 2019). A randomized clinical trial led by Piacentini and Woods found that 53% of kids age 17 or younger who received CBIT saw a clinically significant improvement in tics as measured by the Yale Global Tic Severity Scale (*Journal of the American Medical Association*, Vol. 303, No. 19, 2010). A follow-up trial in adults found that 38% saw improvements after CBIT compared with psychoeducation and supportive counseling (*JAMA Psychiatry*, Vol. 69, No. 8, 2012). An 11-year follow-up

study found that 67% of youth who responded to CBIT in the original trial achieved remission at follow-up, with 40% of people across the entire clinical trial sample experiencing partial remission (*Journal of the American Academy of Child and Adolescent Psychiatry*, Vol. 61, No. 6, 2022). The same follow-up found that contrary to fears that suppressing or attending to tics would worsen them, most participants did not experience tic worsening, tic substitution, or life interference from tic management (*Behavior Modification*, Vol. 48, No. 4, 2024).

"Twenty years ago, individuals with Tourette's syndrome and other tic disorders had very few treatment alternatives, and those that were available often had significant unwanted side effects," Woods said. "With the development, testing, and dissemination of CBIT, the field of psychology has made an important contribution toward improving the lives of those with these conditions."

Nevertheless, many people report they cannot access the treatment because trained CBIT practitioners are in short supply, said Michael Himle, PhD, a clinical psychologist at the University of Utah. Himle and his colleagues have been working on closing the research-practice gap. He has partnered with Woods, Mouton-Odum, and the Tourette Association of America to launch an online training program for professionals, CBIT Trainer, and is currently collecting data for a noninferiority trial to ensure that the online program is as effective as in-person training. The program, available at cbitrainer.com, takes about 10 hours to complete and costs \$699.

Himle, Woods, and Mouton-Odum have also launched TicHelper, an online self-help version of CBIT that uses video sessions to walk kids and their families through the intervention.

(The researchers receive royalties from TicHelper fees.) They are now analyzing data from the first 2,000 users of TicHelper to assess how well it works.

Strengthening behavioral treatment

Because about half of kids and most adults who try CBIT do not respond or only partially respond to it, there is a lot of interest in how to improve behavioral tic treatment. One alternative is exposure and response prevention (ERP), which involves learning to tolerate the urge to tic, a feeling that can be quite uncomfortable. CBIT often works tic by tic, picking a competing response appropriate to each, but ERP works on all tics at once. In a randomized controlled trial comparing ERP and habit reversal training with medication and psychoeducation, ERP showed a similar reduction in tic severity as medication, while psychoeducation made no difference (Rizzo, R., et al., *Frontiers in Psychiatry*, Vol. 9, 2018). ERP response rates are also similar to CBIT. However, sessions are 60 to 90 minutes, which is a barrier for some patients.

In a similar attempt to build tolerance for the frustrating feeling of wanting to tic, McGuire and Hannah Reese, PhD, a psychologist at Bowdoin College in Brunswick, Maine, are looking at the effectiveness of a mindfulness intervention. Their method, Mindfulness-Based Intervention for Tics (MBIT), developed in collaboration with Alan Brown, MA, a mindfulness teacher who has TD, overlaps with CBIT, Reese said. MBIT focuses on using traditional mindfulness practices to increase awareness of premonitory urges and tics, decrease stress, enhance distress tolerance, and boost self-compassion.

“We initially just start by teaching

people how to pause and slow down the process,” Reese said. “Can they observe that urge, notice what it feels like in their body, notice what thoughts and emotions might be arising at the same time? And then, once they have done that, can they begin exploring whether they might be able to respond differently to that urge to tic?”

Sometimes, people will imagine the urge as an ocean wave and let it crest and collapse, Reese said. Other people will anchor themselves to their breath and ride out the urge. “Different

approaches seem to work for different people,” she said.

A pilot randomized controlled trial of 28 people comparing eight sessions of MBIT to eight sessions of psychoeducation, relaxation, and supportive therapy showed significantly greater improvements with MBIT, with 69% of participants responding to MBIT compared with only 13% who received the supportive therapy (*Movement Disorders*, Vol. 39, No. 9, 2024).

McGuire and Reese are now halfway through a 5-year clinical trial to further test the intervention and

Transient childhood tics are common, with about 15% to 20% of kids experiencing temporary tics that lessen on their own.



to investigate the mechanisms that lead to the most improvement. This might be attentional control; awareness of premonitory urges; general stress relief, which can improve tics indirectly; or self-compassion. “If we find out what that is, we can also think about other types of treatments that could also help provide that same relief,” McGuire said.

In similar research, Conelea, who runs the University of Minnesota’s Minnesota Tic and Compulsivity Lab (MnTic), is working on a trial of CBIT aimed at understanding why it works, using fMRI and EEG to see how brain networks change over the course of treatment. In another ongoing MnTic study, researchers are combining behavioral treatment with noninvasive transcranial magnetic stimulation (TMS), which uses external magnetic fields to stimulate brain activity changes. The lab was recently designated as a Tourette Association of America Center of Excellence, meaning it provides the highest level of treatment and conducts groundbreaking research on the condition.

Neurologically speaking, Conelea said, people with chronic tics have an overactive, overconnected corticostriatal sensorimotor circuit that links the cortex to deep motor structures in the brain. They also have underactive, underconnected inhibitory circuits and overactive limbic circuits. Collectively, this circuitry makes movements more likely, more difficult to inhibit, and more impacted by emotional states. Behavioral interventions such as CBIT likely help strengthen the prefrontal inhibitory circuits, Conelea said. She and her colleagues are targeting the corticostriatal sensorimotor connection with TMS, hoping that the stimulation encourages plasticity in that system. Initial results

in the first phase of the research suggest that TMS helps reduce the overconnection in sensorimotor circuitry, Conelea said (*Frontiers in Human Neuroscience*, Vol. 19, 2025). The researchers are now recruiting for a randomized controlled trial of CBIT with or without active TMS, which they hope will link brain changes to changes in tic symptoms.

Understanding comorbidities and lifestyle

One major factor in tic disorders is that they often appear alongside comorbidities such as obsessive-compulsive disorder or attention-deficit/hyperactivity disorder, said Walkup. It is important not to jump straight to behavioral treatment for tics without evaluating for comorbidities that may need to be treated as well—or even prioritized for treatment if their effects are more onerous than the tics, Walkup said. “Tics wax and wane,” he said. “They increase with excitement and stress, and they improve with calm, focused activities.”

Anxiety disorders, separation anxiety, and generalized worry can all worsen tics, Walkup said. Depression, which typically presents later in adolescence, may also worsen tics for some teenagers who previously had their tics under control. Life stressors also play a big role, he said, so while most people see their tics decline as they pass into late adolescence or young adulthood, some may see their tics worsen as they get to college or take their first high-pressure job.

“When I see a 22-year-old, my goal there is not just to treat the tic, but to figure out why the tic is bouncing outside of the normative developmental pathway,” Walkup said.

Helping patients get “in the zone,” as Walkup puts it, can create an environment where tics are less likely.

Because tics decline during focused, functional activity, Walkup helps kids and families set up routines and responsibilities that get kids in that mindset.

It is essential for psychologists to “teach the lifestyle component,” Walkup said. “Exercise is really good for tics, getting a good night’s sleep is really good for tics, developing your daily routine and putting some sophistication into it so you are in control of the things you can control is really good for tics.” ■

FURTHER READING

Nix your tics! Eliminate unwanted tic symptoms: A how-to guide for young people (2nd ed.)

B. Duncan McKinlay
Life’s a Twitch!
Publishing, 2022

Description, implementation, and efficacy of the Comprehensive Behavioral Intervention for Tics as first-line treatment for Tourette and other tic disorders

Kohler, K., et al.
Journal of Child and Adolescent Psychopharmacology, 2025

Course of tic disorders over the lifespan

Black, K.J., et al.
Current Developmental Disorders Reports, 2021

The New Science of



SLEEP



Sleep researchers are learning more about the complex relationships between sleep and mental health—and finding new ways to treat insomnia

BY KIRSTEN WEIR



IN A WORLD OF 24-HOUR GYMS and entertainment that you can stream any time and place, it's no surprise that sleep often gets shortchanged. "We're in this culture where we like to wear sleep deprivation as a badge of honor," said Jessica Payne, PhD, a cognitive neuroscientist at the University of Notre Dame and cofounder of The Brain-Based Leader, an organization that provides neuroscience-based leadership development programs. "But we wouldn't spend a third of our lives asleep if it wasn't truly essential."

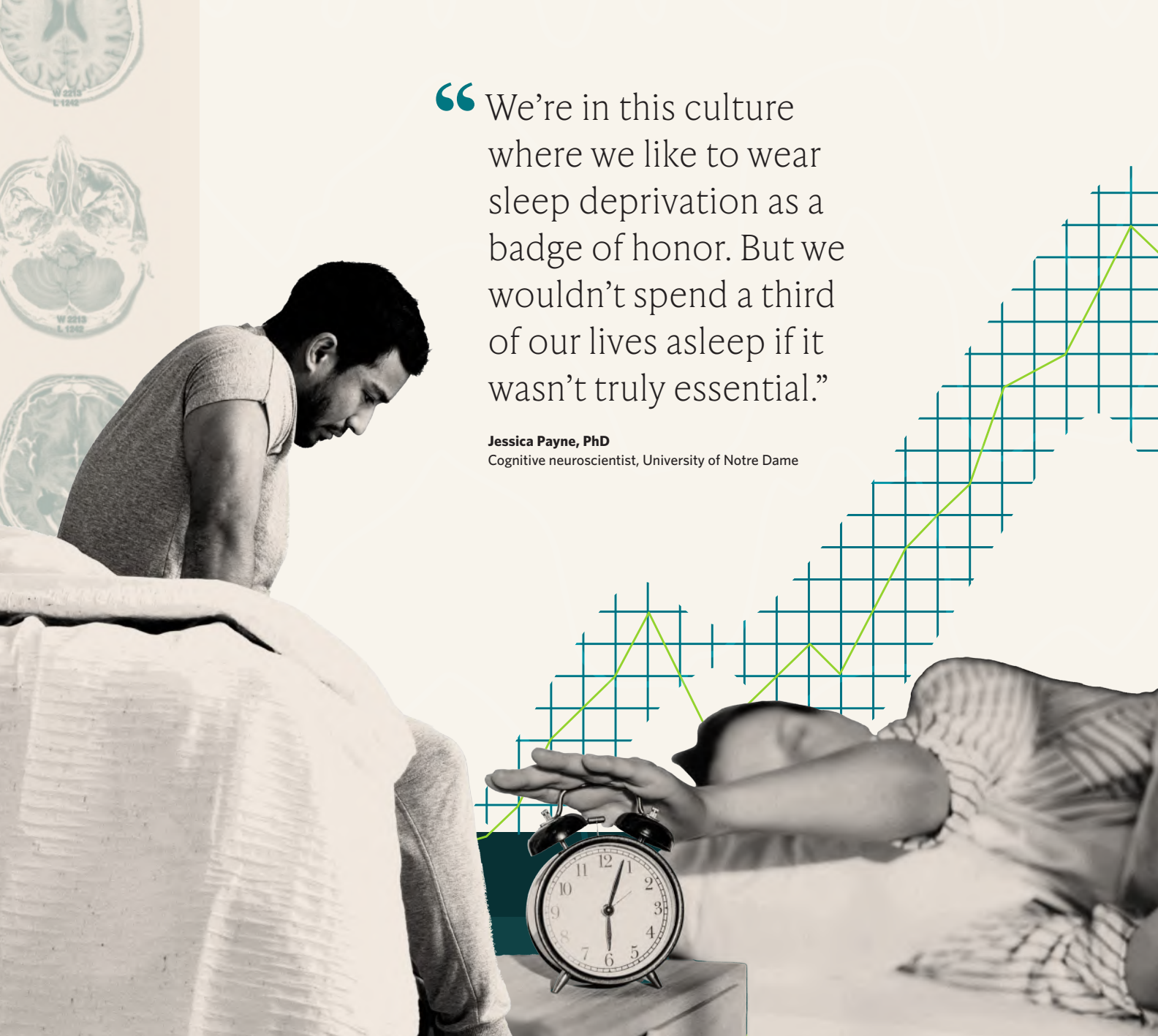
Chronic sleep deficiency increases health risks like obesity, Type 2 diabetes, and heart disease, and psychologists have long recognized that sleep problems and psychological conditions frequently co-occur. But recent research has revealed more about the links between sleep and mental health. As sleep scientists uncover clues about the ways sleep affects the brain, new interventions are helping to improve slumber in people with sleep disorders like insomnia.

Disrupted sleep is a common feature of many mental health disorders, including depression, anxiety, post-traumatic stress disorder (PTSD), schizophrenia, and bipolar disorder. "For so long, the mental health field had the attitude that sleep problems are just symptoms of mental health problems. So why spend all this time focusing on sleep when we should focus on treating their mental health problems," said Philip Gehrman, PhD, a professor of clinical psychology at the Hospital

AT A GLANCE

- The relationship between sleep and mental health problems is bidirectional—and sleep troubles may precede, or even cause, mental health symptoms.
- Insomnia can be treated with evidence-based interventions such as cognitive behavioral therapy for insomnia and acceptance and commitment therapy for insomnia.
- Sleep disturbances are common across mental health disorders, including anxiety, depression, PTSD, bipolar disorder, schizophrenia, and others.

KATERINA KONVACENKO PHOTO LIBRARY/GETTY IMAGES; GERASIMOVITZ/GETTY IMAGES; FORIS JOVANOVIC/GETTY IMAGES; DMP/GETTY IMAGES; KSENIYA OVCHINNIKOVA/GETTY IMAGES; MIKAEV/GETTY IMAGES



“We’re in this culture where we like to wear sleep deprivation as a badge of honor. But we wouldn’t spend a third of our lives asleep if it wasn’t truly essential.”

Jessica Payne, PhD
Cognitive neuroscientist, University of Notre Dame

of the University of Pennsylvania. But now, he added, there is too much evidence to ignore that the relationship between sleep and mental illness is bidirectional—and that sleep troubles often come first.

Sleep problems are sometimes a sign of mental health problems. Insomnia may signal that a recurrence of depression is about to begin, for instance. In other cases, lack of sleep may actually contribute to the development of mental illness. One

meta-analysis of longitudinal studies concluded that insomnia is a significant predictor for the onset of depression, anxiety, alcohol abuse, and psychosis (Hertenstein, E., et al., *Sleep Medicine Reviews*, Vol. 43, 2019). Research also shows that people with preexisting sleep difficulties are more likely than those without to develop PTSD after exposure to trauma (Carlson, G. C., et al., *Sleep*, Vol. 46, No. 3, 2023; Koffel, E., et al., *Journal of Anxiety Disorders*, Vol. 27, No. 5, 2013).

“There are dozens of longitudinal studies that show people with insomnia, but no evidence of any other mental health problems, are more likely to develop new-onset mental health problems,” Gehrman said. “Changes in sleep are often a harbinger of things to come.”

Sleep and mental health

There are probably multiple mechanisms that bind sleep problems to mental health. For starters, sleep

High levels of cortisol are linked to inflammation, which affects the body in numerous detrimental ways. Even a single night of sleep deprivation can

with those with normal sleep patterns (Irwin, M. R., et al., *JAMA Psychiatry*, Vol. 82, No. 9, 2025).

Much of the research on sleep and mental health has focused on insomnia, but other sleep problems are also associated with poor mental health. Circadian rhythm disorders, which cause a misalignment of the body's internal clock, affect about 3% of the adult population and are often misdiagnosed as insomnia. These disorders can contribute to serious neuropsychiatric conditions such as schizophrenia and bipolar disorder. "There's now emerging evidence that, at least for a subset of patients with bipolar disorder, circadian rhythm deficits may actually be the primary problem. In other words, bipolar disorder may be more of a circadian rhythm disorder than a true mood disorder," Gehrman said. Lithium, which has long been used to treat bipolar disorder, seems to work by correcting the circadian rhythm, he added.

A more prevalent problem is obstructive sleep apnea, which causes repeated pauses in breathing during sleep and affects more than 32% of adults in the United States (Sönmez, I., et al., *Respiratory Medicine*, Vol. 248,

SLEEP TRAINING PROGRAMS

For doctoral and postdoctoral scholars seeking a specialized pathway to master the psychological and behavioral factors affecting sleep, SBSM lists more than 20 programs. These programs offer diverse clinical environments ranging from pediatric centers like Children's Hospital Colorado to veteran-focused training at the Veterans Affairs (VA) systems in Durham, Los Angeles, and Seattle. Through a combination of research and hands-on rotations, participants learn to treat insomnia, circadian rhythm disorders, and sleep-related breathing issues across the entire life span.

For more information about accredited behavioral sleep medicine training programs, contact the SBSM national office at 859-312-8880 or visit www.behavioralsleep.org/index.php/sbsm-educational-opportunities/accredited-fellowship-programs.

AASM offers a variety of continuing-education resources for clinicians, including *Guidelines for the Practice of Sleep Medicine*, which features review papers, clinical guidelines, and best practice papers to update non-sleep clinicians on the practice of sleep medicine. Offerings for sleep psychologists include *Behavioral and Psychological Treatments for Chronic Insomnia* and a *Behavioral Sleep Medicine Therapies Bundle*. To learn more, visit shop.aasm.org/collections/on-demand-modules.

The APA Office of Continuing Education in Psychology offers an introductory workshop on normal human sleep, sleep disorders, and the interaction of sleep disorders with mental health. This on-demand webinar includes an overview of diagnostic features and practice guidelines for common sleep disorders. To watch the webinar, *Sleep and Its Disorders: A Primer for Mental Health Professionals*, visit www.apa.org/education-career/ce/ipce021.

“When we treat sleep disorders, we see pretty rapid improvements in mental health symptoms.”

Jennifer Martin, PhD

Past president of the American Academy of Sleep Medicine



2025). Sleep apnea commonly co-occurs with depression. One study of 293 people with untreated sleep apnea found that nearly 73% had depressive symptoms. After 3 months of treatment with continuous positive airway pressure (CPAP) therapy, however, just 4% had ongoing depressive symptoms (Edwards, C., et al., *Journal of Clinical Sleep Medicine*, Vol. 11, No. 9, 2015).

“That’s the hopeful side of this picture,” said Jennifer Martin, PhD, director of the Benjamin León, Jr. Family Center for Geriatric Research and Education at Florida

International University and a past president of the American Academy of Sleep Medicine. “When we treat sleep disorders, we see pretty rapid improvements in mental health symptoms.”

Sleep interventions

That’s not to say that treating sleep disorders is easy. “But it’s often easier than treating other aspects of a clinical condition,” Payne said. CPAP therapy is very effective for sleep apnea, and several other new treatments for the

BRAIN SCIENCE

SLEEP AND MEMORY

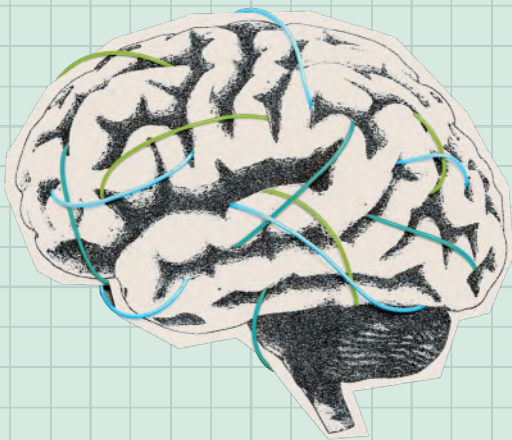
People often think of sleep as a time when the brain goes offline to rest. In fact, a sleeping brain is a busy brain. “The research is increasingly clear that there is something about sleep that is special—and special in an active way—that benefits our ability to consolidate memories,” said Jessica Payne, PhD, a cognitive neuroscientist at the University of Notre Dame who studies the relationship between sleep, stress, and memory.

In deep sleep, coordinated slow-wave rhythms pulse through the cortex, the outermost layer of the brain. Farther down, in the thalamus, slightly faster bursts of activation occur, and even faster waves ripple through the hippocampus, deep in the brain. When those rhythms align during deep sleep, Payne said, conditions are optimized for processing input from the day and stabilizing it into long-term memory. That processing is more than a nighttime filing system. “It’s also about linking up that new input with what’s meaningful from your past and integrating information so that you can find patterns,” Payne explained. “It’s all of that higher-level cognition that makes us human.”

Shortchanging the processes can affect your ability to remember. A meta-analysis of studies on sleep and learning found that total sleep deprivation had a detrimental impact on remembering newly learned materials, whether that sleep deprivation occurred before or after learning (Newbury, C. R., et al., *Psychological Bulletin*, Vol. 147, No. 11, 2021). The findings suggest that sleep may prepare the brain for learning the following day and also strengthen new memories learned the previous day.

There’s another, darker side to the sleep-memory connection. Dementia often impairs sleep-wake cycles, and there is increasing evidence that sleep deficits may increase dementia risk. Scientists are still investigating that link, but recent research points to one possible cause. A system known as the glymphatic system has been shown to remove metabolic waste from the brain—and that system is most active during sleep. Glymphatic clearance has been proposed as the mechanism that gives sleep its restorative function (Hauglund, N. L., & Nedergaard, M., *Brain*, online first publication, 2025). It may also contribute to Alzheimer’s disease, if chronic sleep deficits cause metabolic waste such as amyloid plaques and tau tangles to build up in the brain (Nedergaard, M., & Goldman, S. A., *Science*, Vol. 370, No. 6512, 2020).

There’s still a lot left to sort out about the way sleep influences memory and whether it influences the risk of dementia. In the meantime, there’s more than enough evidence to conclude that skimping on sleep is bad for the body and the brain. “Sleep is essential, and I’ll bang that drum for the rest of my life,” Payne said.



disorder, including medications and an implantable device, have recently been approved or are in clinical trials.

Insomnia, too, is more treatable than many people realize—and it’s important to treat it specifically, even in people with comorbid problems such as anxiety or PTSD or even chronic pain. When insomnia coexists with other conditions, treating those conditions doesn’t tend to improve sleep, said Shelby Harris, PhD, a clinical psychologist in New York who specializes in behavioral sleep medicine. “But we find that when someone’s sleep starts improving, their coping mechanisms, their reactivity to stress, their emotional reactivity gets better and that helps enhance their treatment for depression or anxiety,” she said.

Cognitive behavioral therapy for insomnia (CBT-I) is the gold standard, and groups such as the American

“[Acceptance and commitment therapy for insomnia] teaches people not to look at insomnia as a problem that has to be solved, because trying too hard is actually the thing that makes people lose sleep.”

Shelby Harris, PhD

Clinical psychologist, behavioral sleep medicine specialist



Academy of Sleep Medicine and the American College of Physicians recommend CBT-I as first-line therapy (Edinger, J. D., et al., *Journal of Clinical Sleep Medicine*, Vol. 17, No. 2, 2021). “There are over 100 randomized controlled trials of CBT-I, in all different patient populations, that show the vast majority of people experience dramatic symptom improvement or even remission of their insomnia,” Martin said.

Research also backs up the idea that insomnia treatment can improve mental health. One study found that in patients with depression and insomnia, CBT-I improved both sleep and depression symptoms. In fact, people who received insomnia treatment saw as much improvement in their depression symptoms as did people who received depression treatment (Blom, K., et al., *Sleep*, Vol. 40, No. 8., 2017).

CBT-I is also quite accessible, typically lasting just four to eight sessions. What’s more, there’s evidence that, for appropriate patients, app-based CBT-I can be effective when therapists aren’t available. A recent meta-analysis found that fully automated digital CBT-I platforms resulted in moderate to large effect sizes on insomnia severity (Hwang, J. W., et al., *npj Digital Medicine*, Vol. 8, No. 1, 2025). Still, given that insomnia is so common, and linked to such a wide range of different initial triggers, there’s room to optimize existing treatments and develop new ones.

Some sleep specialists, including Harris and Martin, are starting to explore acceptance and commitment therapy (ACT) for insomnia, which may benefit some patients who don’t respond well to CBT-I. ACT uses mindfulness and cognitive diffusion

strategies to accept and let go of thoughts about sleep. “It teaches people not to look at insomnia as a problem that has to be solved, because trying too hard is actually the thing that makes people lose sleep,” Harris said. “I find that patients with a lot of sleep anxiety who are always trying to force sleep to happen tend to do better with ACT.”

In a randomized trial of 149 women veterans with insomnia, Martin and her colleagues compared CBT-I with a novel treatment that combined acceptance and commitment therapy with behavioral changes to treat insomnia (ABC-I). They found the two interventions were similarly effective, both immediately after treatment and at a follow-up 3 months later (*Journal of Consulting and Clinical Psychology*, Vol. 91, No. 11, 2023). Although the effectiveness of CBT-I is extensively

“If you’re a psychologist, you are a sleep clinician whether you like it or not.”

Philip Gehrman, PhD

Professor of clinical psychology, University of Pennsylvania



documented, the early findings suggest that the less-tested ABC-I could be an alternative for patients who, for one reason or another, may not respond as well to CBT-I. However, the authors hasten to note that ACT alone is not likely to improve insomnia without also incorporating behavioral strategies that specifically target sleep habits, such as scheduling bedtimes and wake times. “The secret is that you have to include the behavioral components of ABC-I,” Martin said.

Help to sleep

As awareness of the importance of sleep has grown, more people are seeking help for sleep difficulties. Yet Harris said this trend has created new challenges without fully solving existing ones. She’s noticed an uptick in younger patients—often influenced by social media and modern wellness culture—who come to her hoping to optimize their sleep habits. But often, she said, their focus on perfect slumber confuses optimal sleep with actual sleep disorders and leads to

increased anxiety about sleep. At the same time, she said, there’s still a gap where many people with true sleep disorders like insomnia or sleep apnea are falling through the cracks without treatment. And many others are burning the candle at both ends, regularly getting too little sleep because they haven’t made it a priority.

While sleep apnea is not strictly a psychological disorder, it’s also important for clinicians to be aware of the basics of the disorder, Harris said. After menopause, apnea rates in

GERARD WIT/GETTY IMAGES; KARRAS/GETTY IMAGES; SHUTTERSTOCK/GETTY IMAGES; GATIANA/CONSCIENCE PHOTO LIBRARY/GETTY IMAGES; MIKALEV/GETTY IMAGES; EPLD/GETTY IMAGES

TEACHING CONNECTIONS

LESSONS ON THE SCIENCE OF SLEEP

The following prompts (organized by topic) can support educators in discussing the science of sleep and mental health in the classroom.

- 1. Biological bases of behavior** The article describes how sleep deprivation triggers cortisol release, systemic inflammation, and blunted reward learning in the brain. Using what you know about the nervous system and stress response, explain the physiological pathway from poor sleep to depressive symptoms. How does the bidirectional relationship between sleep and mental health challenge a purely psychological explanation of depression?

Reinforces: *neuroscience of stress, hypothalamic-pituitary-adrenal axis, brain-behavior relationships, and biological bases of psychological disorders*
- 2. Psychological disorders** The article presents evidence that sleep disturbances are not merely symptoms of mental illness but may precede or even cause conditions like depression, anxiety, and PTSD. Using the *Diagnostic and Statistical Manual of Mental Disorders* (Fifth Edition) and what you know about the etiology of psychological disorders, evaluate this claim. What are the implications for how clinicians diagnose and treat comorbid sleep and mental health conditions?

Reinforces: *classification and diagnosis of psychological disorders, etiology, and comorbidity*
- 3. Treatment of psychological disorders** Cognitive behavioral therapy for insomnia (CBT-I) and acceptance and commitment therapy for insomnia (ACT-I) represent two evidence-based approaches to treating sleep disorders. Compare the theoretical foundations of each. Under what circumstances might a clinician choose one over the other, and what does the research described in the article suggest about their relative effectiveness?

Reinforces: *cognitive behavioral and third-wave therapies, evidence-based treatment, and therapeutic decision-making*
- 4. Research methods** The article cites a randomized trial in which participants given a low-dose endotoxin showed a threefold greater increase in depressive symptoms if they had insomnia compared with those with normal sleep. Identify the independent and dependent variables in this study. What ethical considerations apply to this research design, and how would you evaluate the internal and external validity of its findings?

Reinforces: *experimental design, operational definitions, ethics in research, and evaluating validity*
- 5. Social and cultural contexts of behavior** Researcher Jessica Payne observes that contemporary culture treats sleep deprivation as “a badge of honor.” Drawing on concepts from social psychology and health psychology, analyze how cultural norms and social influence shape attitudes toward sleep. How might these norms contribute to the gap the article identifies between people who need sleep disorder treatment and those who actually receive it?

Reinforces: *social norms, health behavior, stigma, and cultural influences on psychological well-being*

women approach those seen in men. But women often have more subtle signs; they may not snore or obviously gasp for breath, for instance. And apnea and insomnia often go hand in hand. “In women, these things are often misdiagnosed as depression or anxiety, when actually they’re just not getting screened for apnea,” Harris said. Clinicians can also help people adhere to sleep apnea treatments like CPAP, which can be challenging to adjust to.

Unfortunately, most licensed psychologists receive scant training in sleep problems. According to Martin, 10% of men and 20% of women have insomnia, “and a third of the population gets less than the recommended 7 hours of sleep at night. But we are not doing a great job at educating graduating psychologists to treat these really common problems,” Martin said. It’s never too late to seek out such training, however.

“I think it’s imperative that clinicians learn the basics so they know what they can handle and what they should refer to a sleep clinic,” Gehrman added. “If you’re a psychologist, you are a sleep clinician whether you like it or not.” ■

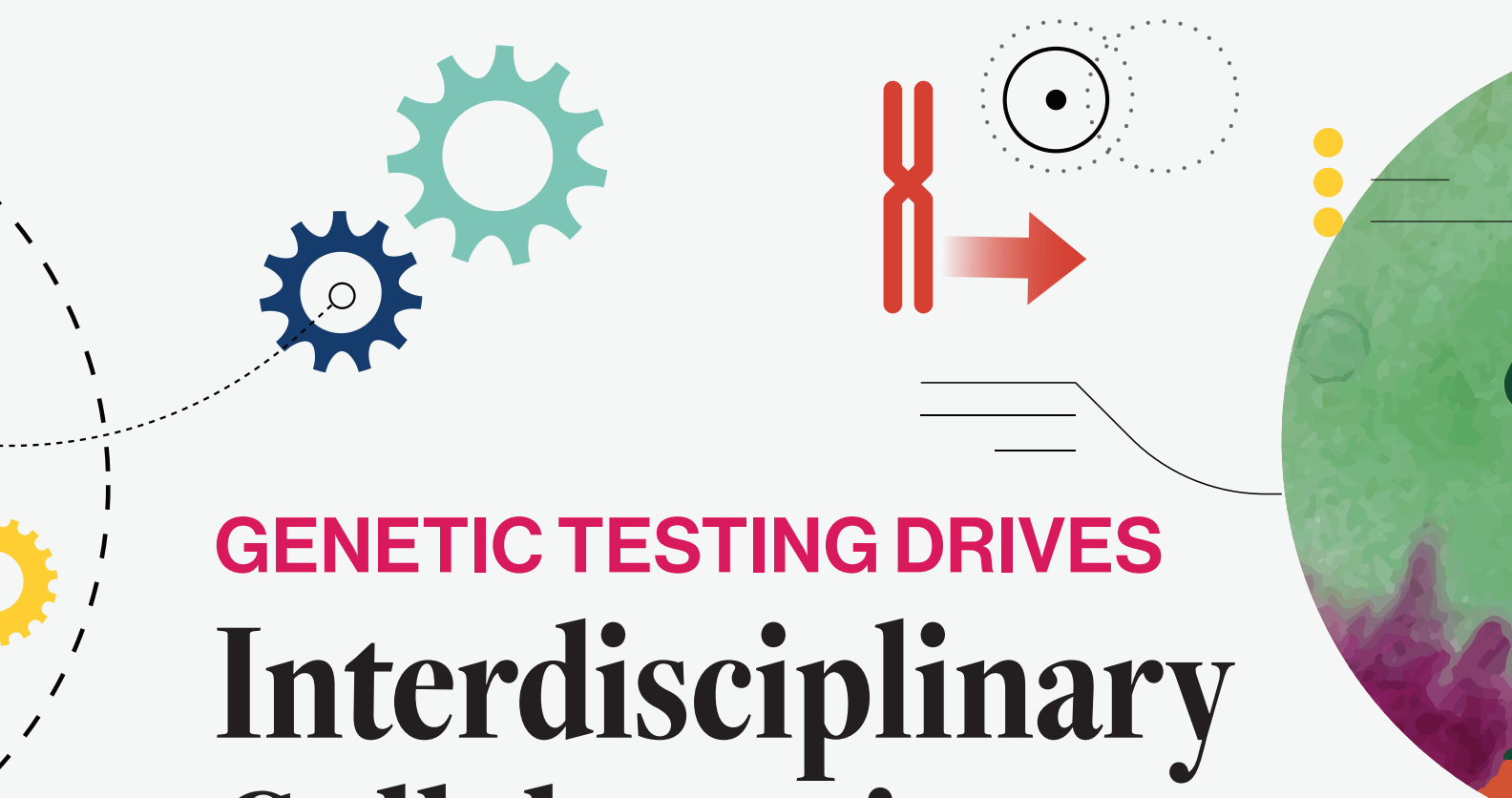
FURTHER READING

Acceptance and commitment therapy as an adjunct or alternative treatment to cognitive behavioral therapy for insomnia
Saldaña, K. S., et al.
Sleep Medicine Clinics, 2023

Cognitive behavioral therapy for insomnia: A meta-analysis of long-term effects in controlled studies
van der Zweerde, T., et al.
Sleep Medicine Reviews, 2019

Diagnosing and treating sleep disorders
Weir, K., *Monitor on Psychology*, July/August 2022





GENETIC TESTING DRIVES

Interdisciplinary Collaboration *in* Patient Care



Providers increasingly rely on counselors
and psychologists to address patients' anxiety
about uncertainty in genetic results

BY MYRIAM VIDAL VALERO

A YOUNG WOMAN CONSIDERING genetic testing to learn her potential risk for amyotrophic lateral sclerosis (ALS) faces a dilemma because a positive result could also reveal unwanted genetic information about her healthy mother. A cancer patient learns that her children could have inherited her genes associated with cancer. A middle-age man learns he carries the genes for autosomal dominant Alzheimer's disease (ADAD) and is likely to develop the condition at an early age and experience memory loss and other difficulties in the process. These and similar scenarios are becoming more common as genetic testing becomes a routine part of health care.

Genetic testing is expanding around the world. These tests examine alterations in DNA and RNA, chromosomal structures, and protein markers to either verify or exclude a potential hereditary condition, as well as assess an individual's risk of acquiring or transmitting an inherited disease. Data from the NIH Genetic Testing Registry show that the different types of genetic tests available rose from 1,081 in 2012 to 6,214 in 2022 globally, while in the United States the available types of tests increased from 607 to 3,097 over the same period. By November 2022, individuals and providers had administered and submitted 197,779 tests worldwide and 129,624 in the United States, including updated versions of existing tests, to the Genetic Testing Registry; more than 90% were intended for clinical use, primarily for diagnosis (Halbisen, A. L., & Lu, C. Y., *Journal of Personalized Medicine*, Vol. 13, No. 4, 2023).

Genetic tests are a powerful tool in diagnosis and illness prevention. However, they can also affect people's emotions and behavior, with reactions shaped by how well they understand the results, how much control they feel

over the disease and their lives, and the resources they have to adapt to a potential new reality (Oliveri, S., et al., *Frontiers in Genetics*, Vol. 9, 2018).

In this context, genetic counseling—a relatively young field of professionals who both understand the science behind genetic test results and have the psychological tools to guide patients through the testing process—is gaining ground. “We bring [these skills] together in a way that is centered around patients and their experiences,” said Kelly Ormond,

AT A GLANCE

- Genetic counselors are increasingly essential in helping patients navigate the emotional and practical complexities of genetic testing.
- Psychologists are working alongside physicians and genetic counselors to develop tools and strategies that make genetic risk communication clearer and more human centered.
- As genetic testing expands in diagnosis and prevention, psychologists will be critical to addressing the long-term mental health impacts of learning one's genetic risk.





current president of the Transnational Alliance for Genetic Counseling and a registered genetic counselor with the American Board of Genetic Counseling and European Board of Medical Genetics. “This is why it’s such an interesting and growing field.”

Although the field remains relatively small, its evolution is opening the doors for interdisciplinary conversations (Ormond, K. E., et al., *Genetics in Medicine Open*, Vol. 2, No. 2, 2024). Those conversations, among physicians, psychologists, and

researchers, are helping to develop tools and knowledge—particularly around communicating risk, uncertainty, and emotional readiness, and planning next steps—that health professionals across disciplines can use to assist patients in navigating complex medical information.

The challenges of communicating uncertainty and outcomes

People seek genetic testing for many reasons, including family history of a single-gene disorder or concern

because of a variant in a relative, such as BRCA1 or BRCA2 (tumor suppressor genes that help repair damaged DNA). Inherited harmful mutations can significantly increase the risk of developing cancers, especially breast, ovarian, pancreatic, and prostate cancers. Clinicians who guide patients through testing must understand these pathways, which can shape patients’ expectations, risk interpretation, and approach to uncertainty (Bagnati, P. M., et al., *Alzheimer’s & Dementia*, Vol. 17, No.

2, 2025; Patel, P. G., et al., *Preventive Medicine Reports*, Vol. 57, 2025).

For people with a family history of disease, genetic testing can reduce uncertainty and inspire precautions such as increased surveillance, regular screening, or preventive care. For others, it can create new worries. For example, a positive result may spark difficult family conversations, fears of discrimination, or anxiety about what lies ahead, said Chloe M. Reuter, MS, a genetic counselor and clinical assistant professor at the Stanford School of Medicine.

A preliminary assessment of a patient's emotional and social readiness to learn the results is critical before genetic testing, explains Jorge Llibre-Guerra, MD, MSc, an assistant professor of neurology at Washington University Medicine Department of Neurology in St. Louis. This assessment goes beyond mental health alone and should consider whether patients have a support network (i.e., family, friends, etc.) and access to health care resources to receive ongoing psychological support over the long term.

Unlike a diagnosis, genetic tests usually show risk, not certainty. Clinicians must learn to communicate these nuances because explaining genetic risk requires more than citing just percentages, said Valerie Reyna, PhD, professor of human development and director of the Human Neuroscience Institute at Cornell University. In conditions such as Huntington's disease, where a positive genetic test means a person will almost certainly develop the illness, the message is relatively straightforward. But that clarity fades in cases including most cancers, where carrying a gene mutation increases risk without guaranteeing the disease will ever appear. "That's a much more complicated conditional probability,"

Reyna said. "You have to be careful. You have to indicate that there's some level of variability in the results."

In her research on fuzzy-trace theory—a cognitive psychology framework—Reyna argues that people do not make decisions by carefully weighing numbers alone, as earlier approaches to numeracy assumed was appropriate (*Medical Decision Making*, Vol. 42, No. 6, 2022; Nelson, W., et al., *Annals of Behavioral Medicine*, Vol. 35, No. 3, 2008). Instead of balancing how large an outcome is against how likely it is, people rely more on the simple, bottom-line meaning of the information. "Patients often have trouble understanding these probabilities and these outcome numbers," Reyna said.

This is where medical professionals can help patients understand the gist—the essence or bottom-line meaning—of how the numbers may impact their lives by communicating in broad, often practical terms. For instance, is a risk tiny, huge, or somewhere in between? Are differences in treatment outcomes large or small? Is the treatment's success a matter of life or death? The main goal is to communicate the potential consequences and the overall meaning of the result rather than minute details.

For example, if a patient with a family history of hemochromatosis—a genetic condition in which iron builds up in organs such as the liver, pancreas, and heart—is doubting whether to get tested, a physician can communicate that managing the condition is simple: donating blood. And while doing so may cause a small inconvenience for the patient, it's still much better than the consequences of leaving the condition unidentified, such as developing a serious illness or even dying.

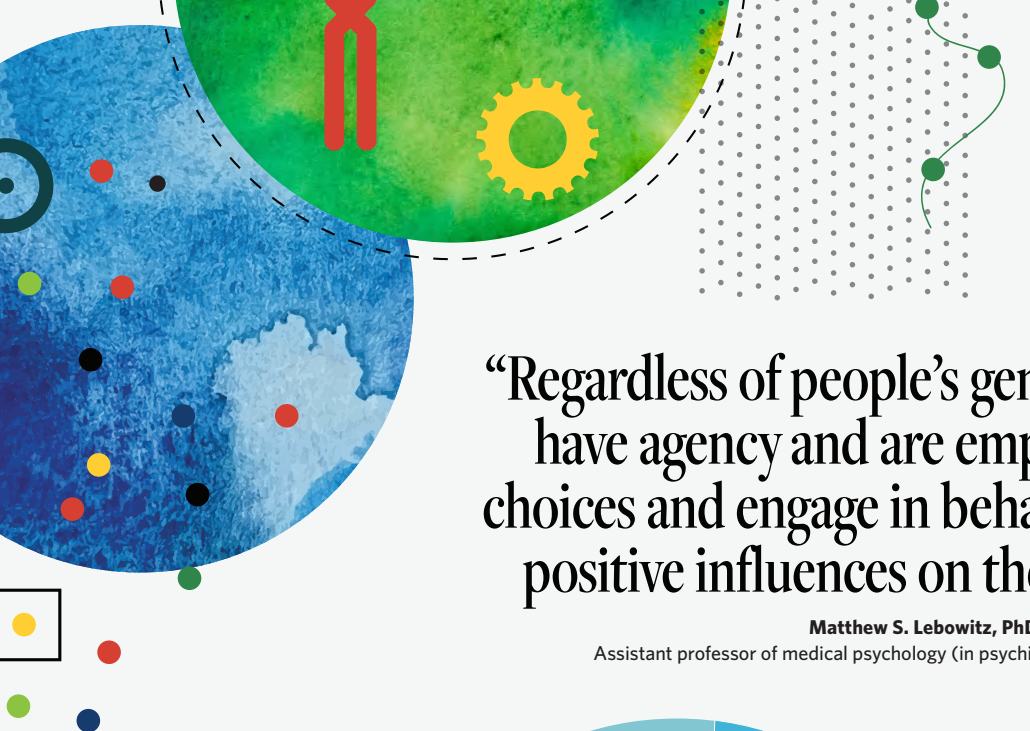
"At the end of the day, you have to think to yourself, what do all these numbers mean? How would

you understand them if you were a patient?" Reyna said. This approach is especially useful when patients are distressed by their results, because strong emotional arousal can make it harder to process, understand, and remember numerical information, she explained.

Once the patient understands the implications of the genetic result, the provider should communicate that there are options, Reyna added. "When people feel fear but don't feel a sense of control, that's when they really despair. And you don't want people to despair in a context like this when so much can be done."

This becomes particularly necessary in cases where genetic testing is used

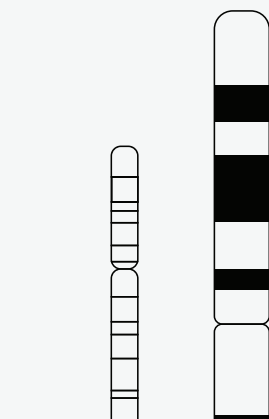




“Regardless of people’s genetic makeup, they have agency and are empowered to make choices and engage in behaviors that can have positive influences on their mental health.”

Matthew S. Lebowitz, PhD

Assistant professor of medical psychology (in psychiatry), Columbia University



to detect genes related to mental health. “People often look at their genes as a sort of a representation of who they essentially are on a fundamental or deep level,” said Matthew S. Lebowitz, PhD, an assistant professor of medical psychology (in psychiatry) at Columbia University.

In his research, Lebowitz has learned that sometimes people who learn about having a genetic predisposition to depression perceive themselves as having had more severe depressive symptoms in the past, altering how they understand themselves and their past selves (*Journal of Consulting and Clinical Psychology*, Vol. 85, No. 11, 2017). He stresses the importance of teaching people that genes don’t operate in a deterministic way. “Regardless of people’s genetic makeup, they have agency and are empowered to make choices and engage in behaviors that can have positive influences on their mental health,” he said.

And this kind of communication shouldn’t stop with the patient. In many cases, counselors and physicians also play a role in helping patients talk with their families—guiding

those conversations and clarifying what a diagnosis means and does not mean. “Illness doesn’t happen in a social vacuum. It totally affects immediate family; it affects friendships,” said Tracey A. Revenson, PhD, a professor of psychology at Hunter College and the Graduate Center of the City University of New York.

Llibre-Guerra, for example, has seen cases where people who have tested negative for the genes that are affecting other family members feel guilt, not relief, upon learning they will avoid the implications for the rest of their family.

After a provider delivers the results, they can refer patients to a licensed psychologist to work on a long-term follow-up and normalize that uncertainty—first by making space for emotion, then by helping patients process the information and regain a sense of control. People may not be able to control whether the disease develops, but they can control their habits, screenings, attention to symptoms, and adherence to treatment, Revenson explained.



Need for this guidance is driving demand for more tools and research grounded in treatment and intervention to improve risk communication and help people cope with the results. “Health psychologists and behavioral medicine specialists have this edge,” Revenson said, “to be able to look at the evidence-based research, to develop interventions or disseminate them.”

Collaboration between psychology and medicine

Genetic counselors receive psychology-based training to support patients around risk and testing, but most are not trained for long-term therapy. Psychologists can provide deeper mental health care and research-based tools that can strengthen how patients are supported before, during, and after testing, making collaboration between the two essential for helping patients with genetic risk.

When Reuter began working with patients with hereditary heart disease and children with rare diseases, she realized she needed more tools than what her training had given her to understand her patients’ concerns. “I didn’t have a structured way to necessarily assess how a patient was feeling psychologically or emotionally about their diagnosis or

about genetic testing,” she said. Around that time, she had the opportunity to work with a marriage and family therapist who introduced her to the BATHE method.

The main goal of the BATHE (background, affect, trouble, handling, and empathy) method, Reuter said, is to give clinicians a simple way to understand how genetic test results or a genetic diagnosis may impact a patient in the context of their life. BATHE guides providers through a brief conversation about what is happening in a patient’s world, how they feel, what worries them most, and how they are coping. Reuter has adapted the approach for genetic counseling but says it can be used by any physician working with genetic tests (in fact, the method was first developed to help physicians improve their communication with patients). Similarly, it can help clinicians check their own assumptions about how patients are feeling and how they might respond (Moscarello, T., et al., *Journal of Genetic Counseling*, Vol. 34, No. 3, 2025).

It is also important that health care systems create the conditions so that professionals communicating genetic results have access to training and strategies for cultural sensitivity, recognizing that patients from different

backgrounds may have distinct concerns, Revenson explained.

In her current research on how different communities in the United States respond to genetic information, she found that concerns vary by culture. Latine patients, for example, often worry about privacy and possible discrimination based on genetic risk, whereas Black patients may be more concerned about discrimination within the health care system. In many Asian cultures, discussions of mental health remain taboo. Being aware of these differences, she said, is essential for building trust. Although cultural beliefs may deter some patients from seeking psychological care, a trusting relationship with the provider who communicated the results can make them more open to a referral.

Llibre-Guerra's work in the Genetic Counseling Program for Latin America (PRAGA), which adapts standardized genetic counseling methodologies to Latin American cultural contexts, particularly for families at risk of ADAD, shows clear differences in who seeks testing. He has found that people with higher education, higher socioeconomic status, and prior family participation in research are more likely to seek genetic testing and better able to process technical information than those with little exposure to genetics or the disease (Bagnati, P. M., et al., *Alzheimer's & Dementia*, Vol. 17, No. 2, 2025).

Even as genetic tools expand and more counselors enter the field, many medical centers in the United States and worldwide still offer testing without support from counselors or clinical psychologists. At the same time, strained health systems leave physicians little time for in-depth conversations.

Genetic counseling visits typically last 60 minutes in many institutions,

but doctors may be pressured to have shorter appointments to fit in as many patients as they can, explained Laynie Dratch, a genetic counselor at the University of Pennsylvania. "Even if [physicians] have the training and the compassion, they might not necessarily have the time."

One possible solution to these shortcomings is the creation of comprehensive programs built into clinical trials, like one Llibre-Guerra helped develop in Latin America. Designed with continuity in mind, the program connects participants to local resources once testing is complete. The program is part of the Dominantly Inherited Alzheimer Network (DIAN), which offers long-term observational studies to track how the disease progresses and, for some families, access to clinical trials. "There's a series of resources after [the clinical trial] that the person can access," Llibre-Guerra said.

Dratch also recommends that psychologists who provide long-term support for clients considering genetic testing, or adapting to the results after genetic testing, learn the basics of key genetics concepts that may be relevant to their clients. The National Society of Genetic Counselors, she noted, offers resources to help clinicians build that knowledge.

Globally, genetic counseling is unevenly regulated, with wide differences across countries, and even within the United States, limiting access to care and creating inconsistencies in the quality of support patients receive. That said, genetic testing is here to stay, and its role in medicine will only grow.

As health systems adapt and genetic counseling moves toward wider regulation, Revenson offers simple advice: Medical providers should lead with empathy. She urges

psychologists and mental health professionals to deepen their understanding of specific diseases and work closely with providers. The same should apply in reverse, she said—physicians should always have psychologists to call on when patients need help coping with the emotional and long-term impact of genetic risk. "We all have to be willing to learn and come out of our comfort zones." ■

FURTHER READING

What can we learn from our DNA?

Winerman, L., *Monitor on Psychology*, March 2019

Addressing psychological impacts of genetic testing on patients, families

APA, 2013

"Learning with each other, about each other": Interdisciplinary learning among genetic counseling students and clinical health psychology residents

Hartley, J., & Holmqvist, M., *Journal of Genetic Counseling*, 2024

Evaluating genetic counseling session duration: A scoping review of patient care time, influencing factors, and impact on patient outcomes

Glanton, E., *Journal of Genetic Counseling*, 2025

Providing the gist of medical expertise in the context of laws, rules, and guidelines: Fuzzy-trace theory's alternative approach to improve patient communication

Edelson, S. M., & Reyna, V. F., *The Journal of Law, Medicine & Ethics*, 2023

**Unpaid internship.
Miss 2 turns.**

**Rent is due.
Pay \$1,800.**



**Identity
crisis!**

**Deleted the app.
Collect focus.**

**Move back in
with your parents.
Go back 3 spaces.**



**You found your
people. Advance
4 spaces.**



**Collect
paych**

**Laid off via email.
Go back 4 spaces.**

**Boundary
set!**



**Comparison
trap.**

**Gap year. Miss
2 turns, collect
perspective.**

**Land a side hustle!
Collect \$200.**

**Situationship
ends.**



THE ROAD

**Overdrafted.
Pay \$35.**

**You got the job!
Advance 2
spaces.**

**Existential crisis
at 2am. Miss
a turn.**

**Burnout.
Go back
to start.**

TO ADULTHOOD

**Get your
check!**

**Doom-scrolled
for 4 hours.
Lose a turn.**

**Discovered a
new passion.**



**You made a
pros/cons list.
Collect clarity.**

**Pay \$400.
(Student
loans)**

Psychologists around the world are studying how best to support young people during emerging adulthood, the growing gap between adolescence and maturity

BY ZARA ABRAMS

WHAT DOES IT MEAN to be an adult? Society's views on that have changed over the past half century. At least 95% of Americans say finishing school and gaining financial independence are key markers of adulthood, but as of 2017, more than half say marriage and parenthood are not very important (Vespa, J., *The Changing Economics and Demographics of Young Adulthood: 1975–2016*, U.S. Census Bureau, 2017).

No matter how it is defined, becoming an adult is a process. Psychologists think about this period, spanning roughly ages 18 to 29, in various ways, including young adulthood, late adolescence, and the transition to adulthood. But one term—*emerging adulthood*—captures something distinct: an extended period of exploration and uncertainty shaped by today's social and economic realities.

"This demographic space has opened up where people are less dependent on their parents but have not yet entered the settled roles of adult life, making the 20s different than they were before," said Jeffrey Jensen Arnett, PhD, a professor of psychology at Clark University in Worcester, Massachusetts, and the author of *Emerging Adulthood: The Winding Road From the Late Teens Through the Twenties* (Oxford University Press, 2014), who proposed the term "emerging adulthood" in 2000 (*American Psychologist*, Vol. 55, No. 5, 2000).

Cultural narratives often frame this decade as life's peak, but today's emerging adults face a different reality. High housing costs, a tough labor market,

and a broader climate of uncertainty are causing many to delay classic adult milestones, including marriage, home ownership, and independent living. In 2023, 18% of 24- to 35-year-olds lived with a parent, up from 11% in 2005 (Fry, R., "The Shares of Young Adults Living With Parents Vary Widely Across the U.S.," Pew Research Center, April 17, 2025; Hemez, P., & Vespa, J., *Changes in Milestones of Adulthood*, U.S. Census Bureau, 2025).

This group reports elevated rates of loneliness and mental health concerns that often surpass those of other age groups (Witters, D., Gallup, April 4, 2023; "Mental Illness," National Institute of Mental Health, 2024). In response, psychologists are working to understand both the vulnerabilities and opportunities of this life stage—how young people develop, what healthy transitions look like, and how

Roommate moved out. Miss a turn.

Got the raise! Collect \$300.



Volunteered for a cause you care about.

Collect purpose.

families and institutions can offer better support.

An in-between phase

In the 1990s, Arnett conducted systematic interviews with people in their 20s. He documented their ideas about the transition to adulthood, which differed from the prevailing

AT A GLANCE

- The modern concept of emerging adulthood, the period from ages 18 to 29, has arisen in part because of changing economic and social conditions.
- During this period of identity exploration and uncertainty, young adults make key choices about love, work, education, and worldviews.
- Psychologists who are focused on emerging adulthood support healthy parent-adult child relationships as well as resilience and skill-building that can benefit young people well beyond their 20s.



**Figuring
it out.**

“Rather than relying on milestones like marriage and parenthood to define adulthood, emerging adulthood focuses on developing capacities—things like emotion regulation, tolerating ambiguity, and exercising self-restraint in high-stress situations.”

Abby Goldstein, PhD

Associate professor and chair of the Department of Psychology and Human Development, University of Toronto



**Everyone
is engaged.
Collect anxiety.**

**Too much
screen time.
Miss a turn.**



views of psychologists at the time, and used the data to formulate his theory on emerging adults (*American Psychologist*, Vol. 55, No. 5, 2000).

“Rather than relying on milestones like marriage and parenthood to define adulthood, emerging adulthood focuses on developing capacities—things like emotion regulation, tolerating ambiguity, and exercising self-restraint in high-stress situations,” said Abby Goldstein, PhD, an associate professor and chair of the Department of Psychology and Human Development at the University of Toronto and past president of the Society for the Study of Emerging Adulthood (SSEA).

Arnett suggests this stage arose amid societal shifts, including the

women’s movement and the knowledge economy, which led more Americans to prioritize education above other markers of adulthood. Based on his research, he proposed five features that define emerging adulthood: identity exploration, self-focus, instability, a feeling of being “in between” adolescence and adulthood, and a sense of optimism and possibility. With fewer responsibilities, this period offers a chance to explore capabilities and opportunities. It often involves numerous changes in love, work, and living arrangements.

“Emerging adults struggle with difficult identity questions, which can make this a lonely time of life,” Arnett said. “They may not necessarily be happy during this decade, but there’s

a widespread sense that no matter how hard life is now, it will get better.”

Research on brain development supports the notion of an “in-between” period bridging adolescence and adulthood, said developmental psychologist Laurence Steinberg, PhD, a professor at Temple University in Philadelphia and the author of *You and Your Adult Child: How to Grow Together in Challenging Times* (Simon & Schuster, 2023).

At least until age 25, the brain continues to develop in both structure and functional connectivity. Steinberg and others have shown that those changes are accompanied by parallel increases in impulse control, self-regulation, and other capacities (*Developmental Science*, Vol.

21, No. 2, 2018). Global longitudinal studies, drawing on both self-reports and computerized tests of executive function, suggest self-control and other skills progressively improve across populations between ages 18 and 25 (*Developmental Science*, Vol. 28, No. 4, 2025).

What researchers don't yet know are the psychological consequences that may result from the growing number of young adults living with parents or relying on them for financial support. To support research on that and other questions, APA has partnered with SSEA to launch a new journal, *Applied Studies in Emerging Adulthood*, which will accept submissions starting this summer and publish its first volume in 2027.

"This is new, uncharted territory," Steinberg said. "We know that these changes are happening, but we don't

yet know whether they're significant for psychological development."

Emerging adults today

Today's emerging adults face considerable challenges. According to the National Institute of Mental Health, people ages 18 to 25 have higher rates of mental illness than any other age group—36.2%, compared with 23.1% in the overall population ("Mental Illness," National Institute of Mental Health, 2024). A meta-analysis of 124,855 emerging adults suggests that loneliness levels have steadily increased over the past 4 decades (Buecker, S., et al., *Psychological Bulletin*, Vol. 147, No. 8, 2021).

The COVID years hit this group particularly hard, Arnett said, disrupting a key period of identity exploration that many have struggled to resume. His analysis of U.S. Centers

for Disease Control and Prevention data shows that 18- to 29-year-olds had the highest spikes in anxiety and depression during the pandemic—and they have not yet returned to baseline (*Journal of Adult Development*, Vol. 32, 2025).

"The theory is that development was profoundly disrupted during a period when young people are meant to be physically and socially connected to others," said Carolyn McNamara Barry, PhD, a professor of psychology and dean of the College of Arts and Sciences at the University of Scranton in Pennsylvania and president of SSEA.

But the pandemic was hardly the first anomaly for this generation. In her book *Generation Disaster: Coming of Age Post-9/11* (Oxford University

"Their lives are vastly more complicated than any previous generation's lives have been at this age and in ways that have far outpaced the conditions our brains evolved to deal with."

Karla Vermeulen, PhD

Associate professor of psychology, State University of New York at New Paltz



Press, 2021), Karla Vermeulen, PhD, an expert in disaster mental health and an associate professor of psychology at the State University of New York at New Paltz, argues that today's emerging adults came of age under a unique and sustained set of stressors. Those include climate change, school shootings, the war on terror, the opioid epidemic, and growing political polarization, among others.

"Their lives are vastly more complicated than any previous generation's lives have been at this age and in ways that have far outpaced the conditions our brains evolved to deal with," Vermeulen said.

Social media and smartphones have also left many young adults craving real-world connection but struggling to find it, said Barry, who monitors

the popular app Yik Yak to track what topics emerge pertaining to academic life on her campus. In her clinical work, Goldstein sees emerging adults plagued by constant online social comparison—that is, feeling that their peers are doing well and they need to catch up.

At the same time, these challenges have spurred many emerging adults to develop resilience and self-awareness, Goldstein said. Many are deeply invested in understanding themselves and learning to thrive amid uncertainty. Declining stigma around mental health care is helping them explore those questions in therapy.

Emerging adults are also searching for meaning in new places, Barry said. As religious affiliation declines, those questions are increasingly explored in secular settings, from philosophy classrooms to student organizations (*Emerging Adults' Religiousness and Spirituality: Meaning-Making in an Age of Transition*, Oxford University Press, 2014).

"While many people immerse themselves in religious communities, many others have moved away from religion. Regardless, this continues to be a normative time for emerging adults to take a breath and figure out what they believe," Barry said.

Context and culture

While some experience a prolonged transition to adulthood, many face pressures that accelerate it. Those who live below the poverty line, take on caregiving roles or financial responsibility early in life, suffer traumatic life events or illness, or experience racism or disability often have little time or space to explore questions of identity and purpose.

"These individuals may lack the safety nets that provide stability after a period of instability, making it far more difficult to focus on oneself or recover quickly from setbacks," Goldstein said.

Given that disadvantage and hardship press some people into adulthood sooner than others, some





**Adulting!
Advance 3
spaces.**

**Collect \$200.
(Side hustle!)**



**You showed up
anyway. Advance
3 spaces.**

psychologists warn against framing emerging adulthood as a developmental stage.

“Calling this a developmental stage implies a universality or normalcy that we should all experience,” said Nancy E. Hill, PhD, a developmental psychologist and professor at the Harvard Graduate School of Education. “It suggests there are developmental tasks or expectations that are necessary to encounter or achieve in order to move on to another stage.”

Hill argues that an extended transition to adulthood is largely a product of the residential college experience, an opportunity available to a small subset of the population. On campus, students often get second chances when it comes to drinking, plagiarism, and other rule-breaking activities, unlike people of the same age in other settings. These and other benefits of a slower transition to adulthood are available to only a privileged few.

In *The End of Adolescence: The Lost Art of Delaying Adulthood* (Harvard University Press, 2021), Hill and Alexis Redding, EdD, of the Harvard Graduate School of Education, also argue that today’s emerging adults are not dissimilar from those of past generations. They compare 2015 student interviews with interviews conducted by psychologist William G. Perry, Jr., PhD, with Harvard’s class of 1975.

“When you look at aspects of coming of age—things like identity formation and balancing parent expectations with personal goals—many of them are fundamentally the same,” Hill said.

Outside the college setting, the transition to adulthood unfolds differently across contexts—such as within the military or highly structured religious communities—and across cultures. Through his cross-cultural research and the founding of SSEA, Arnett helped build an international field devoted to understanding these variations.

In one study, Juan Zhong, PhD, an associate professor of psychology at Springfield College, interviewed young women in China who migrated from rural villages to cities for factory work. They often worked 10-hour days, 6 days a week, yet

viewed the move as a profound step forward, one that offered financial independence, autonomy, and renewed hope for the future (*Emerging Adulthood*, Vol. 14, No. 1, 2025).

“The research repeatedly shows that the challenges of leaving and returning home are consistent across cultures,” Goldstein said.

Support without control

With more emerging adults living with their parents or relying on them for financial support, the parent-child relationship often requires renegotiating. Steinberg’s book *You and Your Adult Child* addresses common dilemmas parents face. For example, if parents provide financial assistance, should they have a say in how that money is spent? When an emerging adult moves home, are they given a curfew? Are they expected to join family meals?

“This is a new phenomenon, so nobody knows what the rules are,” Steinberg said.

When it comes to financial support, he recommends starting with an agreement about how much, for how long, and for what purpose. The book also provides guidance on how to respond in helpful ways around romantic relationships, education, career, and mental health while still supporting emerging adults’ autonomy.

Research shows that authoritative parenting, where parents offer support while setting firm boundaries, works well with emerging adults. Parental warmth and involvement are linked to less psychological distress and greater flourishing; psychological control is linked to lower self-esteem and life satisfaction (Steele, E. H., & McKinney, C., *Personality and Individual Differences*, Vol. 146, 2019; Faherty, A. N., et al., *Journal of Social and Personal Relationships*, Vol. 37, No. 2, 2020). Goldstein’s daily diary studies show that even on a day-to-day basis, perceived criticism from parents can decrease well-being for emerging adults (*Journal of Family Psychology*, Vol. 36, No. 8, 2022).

“The goal should be to help parents scaffold their emerging-adult children to make good decisions, which

“We want them to grow up, but we don’t want them to grow away. But the two are intertwined.”

Holly Schaff, PsyD

Private practice, Avon, Connecticut

Waiting for
life to start.
(It already has.)

Read a book
that changed
everything.



requires biting your tongue sometimes,” Barry said.

In her private practice in Avon, Connecticut, Holly Schaff, PsyD, works with emerging adults, helping them navigate uncertainty, find social belonging, and establish their own daily rhythms. But she increasingly also supports parents who often arrive with a mix of confusion, resentment, and fear.

“Finding a way to engage parents early on can be tricky because, understandably, they often feel like they should be doing less—not more—at this point,” Schaff said. “In many ways, this is true. However, parents often need someone to attend to their own internal experience.”

She does that through a psychoanalytic and developmental lens, combining psychoeducation, practical advice, and therapeutic support to help parents uncover and manage feelings such as worry, guilt, embarrassment, anger, and grief, as well as how their own histories shape their parenting. She also distinguishes between physical separation—such as living independently—and psychological separation, emphasizing that the latter is often a prerequisite for independence and greater responsibility in other areas of adult life.

“We want them to grow up, but we don’t want them to grow away,” Schaff said. “But the two are intertwined.”

Many of the same tensions also show up on the other side of the relationship. In therapy, clinicians help emerging adults tolerate psychological separation—learning to make decisions and manage discomfort without input or reassurance from a parent. In her practice, Goldstein also supports emerging adults in shifting their focus from pleasure-seeking to longer-term fulfillment, purpose, and meaning. Over time, many develop resilience and flexibility that serve them well beyond their 20s.

Psychologists say systems can do more to support this process. On college campuses, mental health services that focus on building resilience rather than crisis response can play a key role. As the transition to adulthood continues to evolve, understanding what constitutes healthy development, as well as how to support it, remains a pressing priority.

“We want to understand how 18- to 29-year-olds function, how they can thrive, and what support they need,” Barry said, “especially given that the world they grew up in is complex—and only becoming more so.” ■

FURTHER READING

The theory of emerging adulthood 20 years later: A look at where it has taken us, what we know now, and where we need to go
Nelson, L. J., *Emerging Adulthood*, 2020

Emerging adulthood: The winding road from the late teens through the twenties (3rd ed.)
Arnett, J. J., Oxford University Press, 2024

On edge: Understanding and preventing young adults’ mental health challenges
Weissbourd, R., et al., *Making Care Common*, 2023

Unpacking extended adolescence: Ecological contexts, relationships, and pathways to adulthood from a developmental health perspective
Hill, N. E., & Redding, A. In Bornstein, M. H., & Shah, P. E. (Eds.), *APA Handbook of Pediatric Psychology, Developmental-Behavioral Pediatrics, and Developmental Science*, APA, 2025



FREER



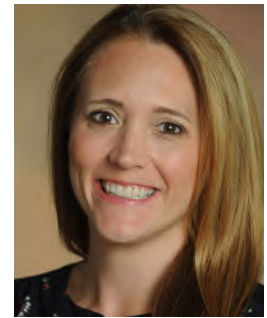
PRICE



ANCOLI-ISRAEL



MAZZOLA



LEUTY

Psychologists in the News

BENJAMIN FREER, PhD, professor of psychology, has been appointed dean of the Marion Turpan College of Psychology and Counseling at Fairleigh Dickinson University (FDU) in New Jersey. Freer joined FDU in 2011 and became a professor in 2024, previously serving as director of the School of Psychology and Counseling and interim dean during the school's formation. A cofounder of FDU's Empathy Center for Research and Training, he has led major initiatives in empathy education, accreditation, external partnerships, and interdisciplinary collaboration.

JODI PRICE, PhD, has been promoted to permanent dean of the College of Arts, Humanities, & Social Sciences at The University of Alabama in Huntsville. She assumed the interim role in June 2025 after serving as the college's associate dean. A member of the faculty since 2008, Price previously chaired the Department of Psychology. Her research focuses on changes in learning and memory across the life span.

SONIA ANCOLI-ISRAEL, PhD, a professor emeritus of psychiatry at the University of California, San Diego, School of Medicine, has been named the 2026 Scientist of the Year by the ARCS (Achievement Rewards

for College Scientists) Foundation San Diego Chapter. Over a career spanning more than 4 decades, she conducted pioneering research on sleep and circadian rhythms in aging, neurodegenerative disease, and cancer. Her work included the first randomized, double-blind continuous positive airway pressure (CPAP) trial in patients with Alzheimer's disease, demonstrating improvements in cognition, sleep, and alertness, as well as slowed disease progression.

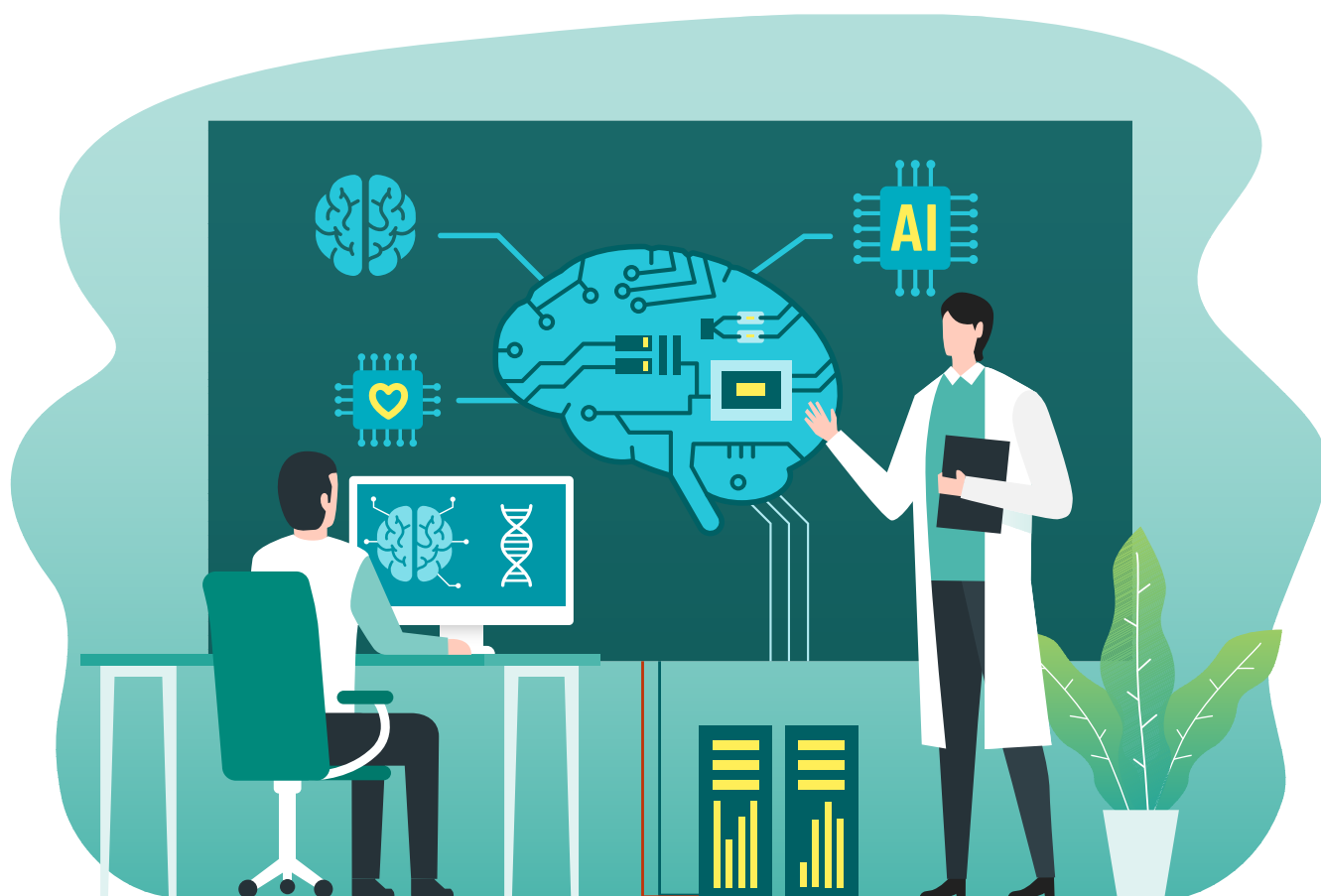
JOSEPH MAZZOLA, PhD, director of the master's program in industrial and organizational psychology at Meredith College in Raleigh, North Carolina, has been elected president-elect of the Society of Occupational Health Psychology (SOHP). He has been involved with SOHP for more than 20 years and previously served as program planning chair. His research focuses on the assessment and management of workplace stress, occupational health promotion—particularly the barriers to and facilitators of nutrition and physical activity—and qualitative and mixed-methods research approaches.

MELANIE LEUTY, PhD, has been named director of the School of Psychology at The University of Southern Mississippi's College of Education and Human Sciences.

Leuty joined the Southern Miss faculty in 2010 as an assistant professor. Her research focuses on career choice and development, career interventions, and vocational assessment.

DAVID TRAFIMOW, PhD, Distinguished Achievement Professor of Psychology at New Mexico State University, received the 2026 Humboldt Research Award. Only 100 Humboldt Awards are granted worldwide each year across all disciplines. Trafimow is internationally recognized for his foundational contributions to psychology, particularly in theory development and research methodology, and his work has played a crucial role in reshaping how researchers think about statistical analysis and research quality.

DEBRA MOLLEN, PhD, a professor and director of the counseling psychology doctoral program at Texas Woman's University, has been named president-elect of the Council of Counseling Psychology Training Programs. The organization focuses on providing training-related resources and networking opportunities for its members. Mollen's research interests include women's sexuality, childfree women, reproductive justice, multicultural counseling, training and teaching issues, and professional development. ■



Bringing Psychological Expertise Into AI Development

Psychologists are uniquely positioned to shape artificial intelligence. Here's how to move from advisory roles into leadership positions in AI development.

BY CHRIS PALMER

WHEN A WELL-KNOWN tech company attempted to build an AI-powered résumé-screening system several years ago, its developers discovered what a century of industrial and organizational (I/O) psychology research could have predicted from the start: Stripping obvious demographic markers like names from résumés didn't eliminate discriminatory bias. Information such as college affiliations, word choices, and even formatting preferences were enough to perpetuate discriminatory patterns.

"They spent a huge amount of money and time trying to sort out these models, and it never worked," said Richard Landers, an I/O psychologist at the University of Minnesota who has consulted with numerous tech companies. "[Psychological scientists] have spent decades upon decades trying to refine exactly what we're asking people for and why, specifically to avoid exactly that problem in hiring."

This scenario illustrates why psychological expertise needs to be brought into the AI development process from

conception, before fundamental design decisions have been made. To do otherwise risks expensive failures that waste resources while potentially causing harm.

The AI revolution isn't just transforming work and communication—it's reshaping who gets to build the future. For psychological scientists, particularly those trained in understanding human behavior, cognition, and well-being, this moment presents what may be an unprecedented opportunity to play a more central role in technological innovation.

But seizing that opportunity requires understanding both the unique value psychologists bring to AI development and how to navigate the cultural chasm between psychological science and Silicon Valley.

What psychological scientists bring to AI

At its core, AI development is about understanding and predicting human behavior, making psychological science essential rather than optional. Psychological scientists' knowledge spans multiple critical domains that extend well beyond mental health applications and health services. Researchers and practitioners can contribute to better conception, design, implementation, and deployment of AI.

■ **Understanding human complexity.** Engineers are trained to identify specific problems, define key metrics, and iterate toward optimization. "The assumption from an engineering standpoint is: If we can't identify a metric for it, it doesn't really matter," Landers said. "Whereas a psychologist is immediately going to say, 'Well, there's this web of complexity that could erupt from what you're doing, and we need to understand that better before we charge forward.'"

This perspective has proved crucial in Landers's work developing an AI coaching chatbot for the U.S. Naval Academy. For example, when a computer scientist on his team suggested simply replicating coaching conversations to train the model, Landers pushed back, as those exchanges are rarely recorded because of their private and sensitive nature. And even if the team did get some transcripts, coaching conversations have so much variability that thousands of examples would be required to create a data set that is broadly representative of "real" coaching.

■ **Risk identification and mitigation.** Psychological scientists' training in ethics and their "do no harm" orientation make them attuned to potential dangers that technologists might undervalue or even dismiss altogether. When developing the Naval Academy coaching chatbot, Landers's team proactively built a separate AI model to detect moderate risk scenarios—including indications of potential self-harm—so that trained professionals could intervene when necessary.

"From a tech perspective, they say, 'Oh, that sounds expensive. Let's just not do that until it's a problem,'" Landers said. "And that's how you end up with harm happening and people having to react to it rather than proactively trying to prevent it from the start."

Notably, Landers's technical partners took a back seat during this part of the project while the psychological scientists designed it themselves using an AI coding tool. "AI has become so accessible that we've actually been able to prototype on our own in a way that's way faster than if we had to go through our tech team," Landers said.

Alison Cerezo, chief science officer at mpathic, a conversation analytics

company focused on AI safety, emphasizes that psychological scientists should apply the same scrutiny to AI systems as they would to human colleagues. "If I were going to add a new clinician to my clinical team, I would want to know about their background and training experiences," they said. "We should be using that same framework with AI systems to ask, what is your training data? How are you being benchmarked? How are you being fine-tuned over time?"

■ **Meaningful assessment.** Margaret Morris, a clinical psychologist and affiliate professor in the Information School at the University of Washington who has worked with Intel, Amazon, and other companies on health technology, points to expertise in assessment as being particularly valuable. "Psychologists can find ways to embed assessments that used to be done infrequently and in the clinic into everyday interactions with technology."

For example, social psychologists in particular can be experts on how humans tend to make biased decisions and how bounded human rationality is. Without their insights, AI models will more likely replicate such biases, leading to poor and discriminatory decision-making. This is applicable to AI decisions about things like job candidates, medical treatments, or even product choices.

The way AI responds to assessment results also benefits from psychology experts' input. For example, AI chatbots may be particularly attuned to detecting negative emotions and encourage people to ignore or suppress them. Cognitive psychologists understand this bias, as it replicates a human tendency to focus on negative information, where clinical psychologists understand that negative emotions are a part of daily life and that,



Social psychologists mitigate AI bias by applying insights that ensure that automated decisions—such as those in hiring and medicine—remain equitable.

in certain contexts, people can benefit from sitting with and even exploring such emotions.

Psychology across the AI life cycle

From framing the right research questions to evaluating real-world impact, psychological scientists play distinct roles across the AI development life cycle.

■ **Initial design.** At this stage, team members decide on a project's goals. Xuhai “Orson” Xu, a computer scientist at Columbia University’s Department of Biomedical Informatics who regularly collaborates with psychological scientists, emphasizes involving experts from the start. For a project involving mental health prediction from wearable data, Xu’s team

consulted psychologists during study design to ensure they measured the right constructs with the right instruments. “What is the appropriate thing to measure? What are the right ecological momentary assessment short questionnaires? How can we make sure people can answer but are not also overburdened? There are many details we need to check with experts from the beginning.”

■ **Data processing.** Once data collection begins, psychological expertise guides the data processing stage—the selection of information to extract. For the wearable devices used in his work, for example, Xu has to consider which variables to track, such as sleep and activity level. Rather than a purely data-driven approach, psychological scientists can draw on

domain knowledge grounded in established theory.

■ **Model interpretation.** During this stage, team members evaluate their model’s performance. When AI systems generate predictions, psychologists can help determine whether results align with scientific understanding. Experts can make comments such as “Okay, this is aligned with the existing literature or domain consensus,” or “This is something that is misaligned but may be interesting to explore further,” Xu said.

■ **Implementation.** The implementation stage is when research findings get translated to practical applications. Cerezo’s work at mpathic illustrates how psychological principles can inform real-world deployment.

Their team has developed more than 200 detection capabilities for monitoring AI conversations, from identifying clinical risk to assessing therapeutic rapport. The company works with about 100 psychologists with different areas of expertise to create training data, safety evaluation rubrics, and other critical tools to ensure AI safety systems are designed to handle the full range of human experience.

■ **Ongoing monitoring.** Morris emphasizes that psychological scientists' roles don't end at product launch but may involve monitoring use over time. She argues that psychologists should check in on interactions between users and AI tools to prioritize long-term well-being over short-term engagement, to prevent users from developing dependency on the tools, and to ensure that the tools don't develop biases or violate user privacy.

Auditing, benchmarking, and red teaming

AI-related roles that psychologists can perform at technology companies include the following:

Psychological auditing involves evaluating AI systems against established psychological and ethical standards.

Human benchmarking compares AI outputs to expert human judgment rather than other AI systems. Landers's team on the Naval Academy project is bringing in clinical psychologists and professional coaches to rate the transcripts of its AI coaching chatbot, providing both quantitative and qualitative feedback that simple technical metrics cannot capture.

Red teaming involves deliberately simulating problematic or dangerous conversations to make AI systems fail or behave inappropriately. Originally



New training programs and specialized frameworks empower psychologists to transcend advisory roles and instead lead AI development within organizations.

a military term referring to the practice of a group taking on the role of the enemy to simulate attacks, red teaming requires a team member with the expertise and authority to know when to pause development and pressure test the system to say, "This is a conversation where human intervention is needed," Landers said. In the same training project, he used red teaming to identify danger signs in conversations with the chatbot. This led to the creation of a second AI model to monitor conversations between the chatbot and trainees to detect even moderate risk

scenarios that should be handed over to human coaches.

Bridging the gap

Though still a nascent industry, a growing number of training programs are emerging to help both psychologists in training and working professionals gain the skills needed to contribute meaningfully to AI development. These range from certifications and microcredentials to master's degrees, postdoctoral programs, and continuing-education courses. Examples include initiatives at Northwestern University, Tilburg

University, Oregon State University, the University of Pennsylvania, Johns Hopkins University, Brown University, Harvard University, and the University of Zurich. (These programs are provided for readers' awareness; their inclusion does not constitute endorsement.)

In addition, APA's Ethical Emotionally Intelligent AI Chatbot Design program seeks to bridge the gap between psychological science and technology by giving chatbot designers psychological frameworks while equipping psychologists to take on stronger leadership roles within AI development. "With the right frameworks and shared language, psychologists don't have to remain in advisory roles," said Bernadette Han, PhD, an organizational psychologist at APA who develops enterprise-level learning initiatives for public-, organizational-, and technology-facing audiences. "They can serve as full partners—or even lead—by guiding teams through the psychological foundations of how AI systems are designed."

Practical advice for psychological scientists

For psychological scientists ready to engage with AI developers and succeed once they've begun a collaboration, here are some key recommendations:

■ **Learn the basics.** You don't need to become a programmer, but understanding fundamental concepts helps communication. Courses on different topics aimed at varying levels of depth abound on LinkedIn, YouTube, Coursera, and other platforms. In addition, most AI chatbots offer free versions with intuitive user interfaces.

■ **Be flexible and curious.** Morris advocates for "flexibility and curiosity" as essential qualities for psychologists

to successfully collaborate with technologists, who tend to work in a nimbler iterative style that relies less on formal theory and more on tinkering. Likewise, ask questions when something is unclear or you hear an unfamiliar acronym, for example.

■ **Calibrate expectations.** Understand AI's current capabilities and limitations alike.

■ **Stay current.** AI technology evolves at a pace that can be surprisingly quick.

■ **Network strategically.** Xu's approach includes asking colleagues for connections, searching departmental websites for relevant specialists, and talking with people at conferences.

■ **Present your expertise.** Share relevant research at conferences and with computer science departments. Propose collaborations with university students doing capstone projects.

■ **Find the applications that match your knowledge base.** Psychological expertise can be valuable to everything from retail chatbots and educational tools that scaffold support and minimize extraneous mental load to digital assistants and talent acquisition platforms. Psychological scientists can contribute to several steps in the conception of these AI products, from their development and deployment to their continued evaluation.

■ **Consider various roles.** Opportunities range from academic collaborations to consulting gigs to full-time positions at tech companies.

■ **Navigating projects.** Insist on human-centeredness. Morris emphasizes that there should be a relentless

focus on what's going to be meaningful to the end user.

■ **Advocate for proper testing.** Don't let pressure to ship a product quickly override safety concerns.

■ **Balance rigor with pragmatism.** Respect the complexity of the human mind and experiences—but not to the point of considering every possible contingency.

■ **Document limitations.** Be clear about what your psychological knowledge can and cannot determine.

The path forward

The integration of psychological science into AI development isn't just about making better products—it's about ensuring AI systems embody human values, respond to human complexity, and serve genuine human needs.

"I imagine what would've happened if in the early days of social media, psychologists had been on the original development teams asking, how will people benefit from interacting in this environment? What risks are there?" Landers said. "The road we're on would be quite different."

The stakes are similarly high for AI development, with AI systems increasingly mediating human interactions and even providing mental health support.

"We need more bold people doing that kind of work," Landers said. "There's never been a better time for psychologists to identify key drivers of human flourishing and develop platforms to improve it."

Cerezo sees immense potential. "I'm really excited about the future," they said. "If we lead with ethics and do our homework to understand how these systems are developed, there's no limit to what we can do." ■



GLP-1s can offer physical and psychological benefits, but they also carry such risks as gastrointestinal side effects and the potential to mask or worsen eating disorder symptoms in vulnerable patients.

Navigating GLP-1 Use in Therapy

Understanding how GLP-1 drugs can impact patients, including those at risk for disordered eating, can help mental health providers offer better support

BY ZARA ABRAMS

G LUCAGON-LIKE PEPTIDE-1 (GLP-1) receptor agonist medications, which include the drugs Ozempic and Wegovy, have been used to treat Type 2 diabetes since 2005. But the drugs gained prominence when the FDA approved their use for weight loss and celebrities from Oprah Winfrey to Elon Musk started touting their benefits. As of November 2025, 18% of U.S. adults had taken a GLP-1, with 12% reporting current use, according to the KFF Health Tracking Poll (Montero, J., et al., KFF, Nov. 14, 2025).

“It’s complicated, because these medications can be life-changing for people with diabetes and other conditions,”

said Sara Bartel, PhD, a clinical psychologist and researcher at the Maritime Eating and Appearance Lab (MEAL), a collaboration between Dalhousie University and the University of New Brunswick in Canada. “The medications themselves aren’t a problem, but the discourse about them at a societal level is, partly because it reinforces the idea that body size is a personal choice.”

While GLP-1s can offer physical and even psychological benefits for some patients, they also come with risks. In addition to common side effects such as gastrointestinal problems, they can mask or worsen eating disorder

symptoms or trigger symptoms among patients in recovery (“GLP-1 Receptor Agonists and Eating Disorders,” National Eating Disorders Association). Rapid weight changes—both loss and regain—may also trigger psychological and relational challenges that are worth addressing in therapy.

Many patients taking GLP-1s could benefit from more support, said Gregory Dodel, MD, an endocrinologist at Central Park Endocrinology in New York, who has seen patients who have been prescribed the drugs elsewhere but are seeking more oversight. In fact, many patients are not getting their GLP-1s from a physician they see regularly: About 26% of people who take GLP-1 drugs get them from an online provider or aesthetic medicine center, according to the 2025 KFF poll.

Even those who do have a provider’s guidance are not always screened for eating disorder symptoms and may even be encouraged

to lose weight when doing so could be harmful, said Ashley Dunford, PhD, a clinical and research psychologist at Massachusetts General Hospital focused on eating disorders in higher-weight patients.

“These drugs are only becoming more prevalent, so it’s really important for mental health providers to find a way to navigate this space with patients,” Dunford said.

Eating disorders and weight cycling

The use of GLP-1s for weight loss is so new that hardly any research has explored how the drugs affect eating disorders. Several early studies have found they can lessens symptoms of binge-eating disorder, whereas others have found no effect, according to a systematic review led by Bartel (*International Journal of Eating Disorders*, Vol. 57, No. 2, 2024).

“It’s way too early to know whether GLP-1s are an effective or useful

treatment for eating disorders,” she said. “People may be eating less, but it’s unclear if that’s a shift toward healthier eating patterns or if they’re restricting in a pathological way.”

While virtually no controlled studies have looked at GLP-1s and restrictive eating disorders, psychologists are concerned about their potential effects. Case reports show that the drugs can be a back channel for patients with eating disorders to reduce their appetite.

In one case study, a patient in a larger body with a history of anorexia was prescribed a GLP-1 for weight loss and Type 2 diabetes management that triggered a relapse of her eating disorder (Guerdjikova, A. I., et al., *Journal of Clinical Psychopharmacology*, Vol. 45, No. 3, 2025). GLP-1 use can mask symptoms of restrictive eating disorders because many common effects (rapid weight loss, nausea, and reduced appetite) overlap.

“For some people with eating disorders or in recent recovery, use of these drugs can be risky. They can be misused to support restriction or become a trigger for relapse,” Bartel said.

Another unanswered question about GLP-1s is whether they are suitable for long-term use. Many patients eventually stop taking the drugs because of the cost or unwanted side effects—and studies show they often regain much of the weight they lost (Wu, H., et al., *BMC Medicine*, Vol. 23, No. 398, 2025). Research on other weight loss interventions, including bariatric surgery, shows that this “weight cycling” can even increase a person’s risk for cardiovascular and metabolic problems later in life (Swartz, A. Z., et al., *The Journal of Clinical Endocrinology & Metabolism*, Vol. 111, No. 1, 2026).

“There’s a hidden risk when it comes to GLP-1 meds. A person who

TIPS FOR TALKING ABOUT GLP-1 USE

It can feel tricky to discuss weight and weight loss with patients. Here’s how to start the conversation.

- Ask patients for permission to discuss weight and weight management, leading with compassion.
- Ask about GLP-1 use during intake evaluations, like any other medication. A thorough intake may also include questions about weight history, body image, and eating concerns, which can help flag at-risk patients.
- If an existing patient starts taking a GLP-1, consider asking questions about body image and eating concerns to uncover potential

warning signs. For example, ask how the medication has affected their appetite and eating patterns, or whether it has changed how they think and feel about their body.

- Ground conversations in validation and approach with curiosity any patient’s motivations for taking a GLP-1, whether driven by health concerns, weight-related discrimination or bullying, relationships, or some combination of these.
- Gauge a patient’s understanding of the drugs, including potential benefits, risks, and impacts on weight and nutrition.
- Explore a patient’s beliefs about what losing weight will mean for them.

goes on and off can get stuck in a weight-cycling process that can be harmful in and of itself,” said psychologist Rebecca Boswell, PhD, a clinical associate professor of psychiatry and director of the Princeton Center for Eating Disorders at the University of Pennsylvania Perelman School of Medicine.

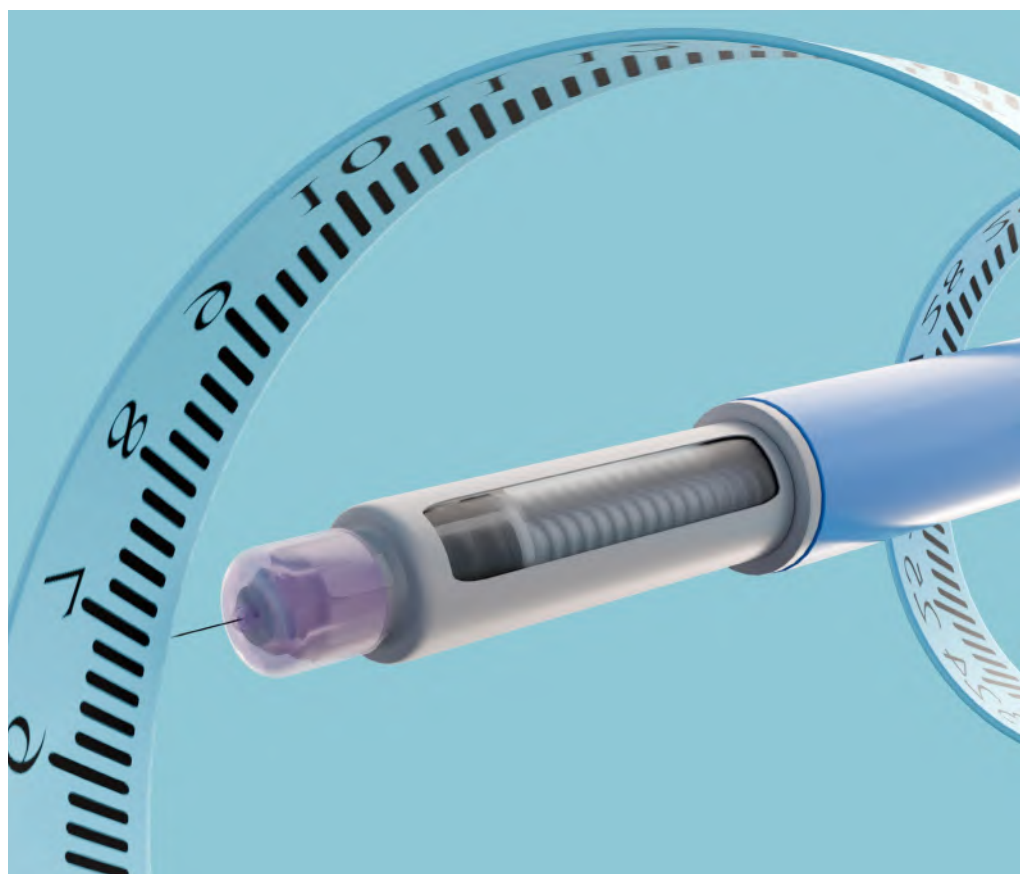
Talking with patients about GLP-1 use

Patients on GLP-1s are often not counseled about the medical and psychological risks of rapid weight loss or regularly screened for eating disorder symptoms. Boswell is working with colleagues across several disciplines to develop clinical guidelines around screening, education, and psychological counseling. In the meantime, mental health providers can help address critical gaps.

“Malnutrition and health risks need to be monitored, but unfortunately patients may not be getting that information from their physician,” said Chevese Turner, an eating disorder and weight discrimination activist who runs the Body Equity Alliance, a health equity consultancy. “So, it’s important that mental health providers are bringing some reality into the situation.”

Therapists can ask about GLP-1 use during intake evaluations, as they typically do for other medications. A thorough intake may also include questions about weight history, body image, and eating concerns, which can help flag at-risk patients. If an existing patient starts taking a GLP-1, it is worth asking a few questions about body image and eating patterns to uncover potential warning signs, Dunford said.

Broaching the subject with patients can be tricky, especially for those who feel they have finally found an effective



If an existing patient starts taking a GLP-1, consider asking questions about body image and eating concerns to uncover potential warning signs.

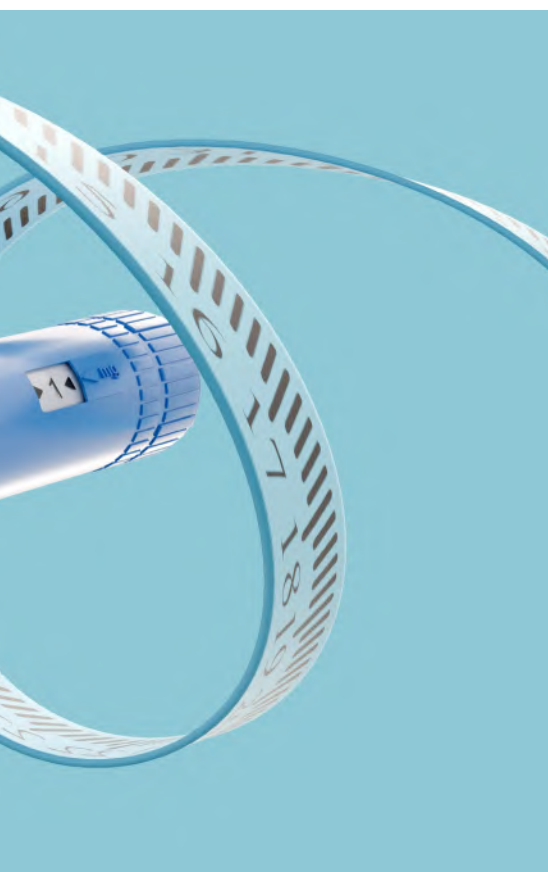
way to lose weight. Start by gaining permission to discuss the topic and lead with compassion, Bartel suggests. “It’s important to validate that someone who has body image struggles—or has experienced significant discrimination because of their body size—may understandably be looking for a solution,” she said.

Boswell recommends approaching a patient’s motivations for taking a GLP-1 with curiosity, whether it stems from health concerns, experiences of weight-related discrimination or bullying, interpersonal relationships, or some combination of these. Next, gauge their understanding of the drugs, including potential benefits, risks, and impacts on weight and nutrition. It

can also help to explore a patient’s beliefs about what losing weight will mean for them.

“Sometimes people believe that weight loss will change lots of things in their lives—their relationship, their success, how they feel,” Boswell said. “We can help them gently consider whether all of that is related to body size or to other parts of themselves.”

Signs of a problem include misuse of the medication (taking larger or more frequent doses than prescribed), cognitive changes around food (labeling foods as “good” or “bad”), and changes in how people think about weight, such as repeating stereotypes about those in larger bodies, Boswell said.



Rapid weight loss is also a cause for concern. If patients report or show signs of malnutrition, such as minimal eating, gastrointestinal changes, changes in temperature regulation, or signs of physical discomfort, they should be referred to a medical provider or dietitian for medical monitoring. Therapists should seek guidance from an eating disorder specialist or connect with a patient's prescribing physician if they have concerns about malnutrition or new symptoms.

Even when disordered eating is not at play, rapid weight loss can be destabilizing, Boswell said, because it can influence how patients relate to others and how they are treated. "Often as their bodies change, folks will report changes in their relationships and how other people treat them," she said, such as receiving more attention in public or being spoken to differently

by family members. "That can be really psychologically startling."

Providers report watching marriages break apart and substance use increase, among other changes. "People feel like they have a new life and sometimes the result is not always positive," Turner said. "It can also be destructive."

In a country where weight-based discrimination is legal in most states—including the workplace—and anti-fat bias pervades media, relationships, and public spaces, GLP-1s offer a chance of relief for some people in larger bodies. "The oppression of fatness is real," Turner said. "It's really hard to thrive and feel good about yourself when the world around you is saying that you're not OK."

In a study of 225 college students, those most interested in trying GLP-1s and most willing to tolerate common side effects also reported higher levels of body shame, weight concerns, and anti-fat bias (Markey, C. H., et al., *Body Image*, Vol. 53, 2025). Such beliefs may predispose people to use GLP-1s as a solution, ultimately feeding into weight stigma rather than lessening it, Bartel said. "These medications are actually perpetuating the idea that body size is a choice, because it's seen as something that can now be easily changed," she said. "That's perfect fuel for discrimination based on body size."

Research suggests that women who use GLP-1s to lose weight also face negative stereotypes because the drugs are seen as a "shortcut" (Post, S. M., & Persky, S., *International Journal of Obesity*, Vol. 48, 2024). Weight stigma has been found to harm mental and physical health and to interfere with eating disorder treatment. "More research is needed on the role of weight stigma in this equation, but it's something providers should be attuned to and prepared to discuss," Dunford said.

As GLP-1 use continues to rise, mental health providers can offer a safe space to help patients navigate choices around these medications. That involves supporting patient goals while also addressing beliefs and pressures that often shape decisions about GLP-1 use, particularly among those at risk for eating disorders. ■

FURTHER RESOURCES

GLP-1 medications & eating disorders

National Association of Anorexia Nervosa and Associated Disorders, 2025

The implications of GLP-1 medications for eating disorders care

Penn Medicine, 2025

A new era of weight loss: Mental health effects of GLP-1 drugs

Medaris, A.
Monitor on Psychology,
July/August 2025

I am taking a GLP-1 weight-loss medication—what should I know?

JAMA Internal Medicine, 2025

Resource guide

Maritime Eating & Appearance Lab, 2022



Efforts to understand the local landscape can help psychologists build credibility and trust with patients in rural areas.

Pursuing Cultural Competence in Rural Mental Health

Lessons in cultural competence often do not cover working with patients in rural areas. Experts share these best practices.

BY ASHLEY ABRAMSON

RURAL COMMUNITIES HAVE long faced mental health inequities, driven in part by lack of access to resources—including licensed psychologists. Depression and suicide impact rural individuals at disproportionate rates, yet provider shortages make it difficult to seek help (Carpenter-Song, E., & Snell-Rood, C., *Psychiatric Services*, Vol. 68, No. 5, 2017). Even when a psychologist or other mental health provider is present, long waiting lists and stigmas about seeking professional support often stand in the way of care (Crumb, L., et al., *Mental Health & Prevention*, Vol. 13, 2019).

The Psychology Interjurisdictional Compact (PSYPACT), an agreement that allows licensed psychologists to practice telehealth across state lines, can increase access to mental

health care in rural communities (see sidebar, page 76). Yet psychologists based in urban or suburban areas looking to expand their practice into rural communities may not understand the texture of rural life, which could impair trust between provider and patient. An effective therapeutic alliance with rural patients—and ultimately, effective care—requires its own type of cultural competence.

“We historically don’t always think of it like a culture as we do other identities, but people who live rurally experience their own cultural considerations,” said Tess Kilwein, PhD, a clinical and sport psychologist and past chair of APA’s Committee on Rural Health. In their own practice, Kilwein sees patients in states including North Dakota and Wyoming.

Unique socioeconomic stressors such as social isolation, poverty, lack of or underinsurance, and food insecurity drive health inequities among people in rural settings. On the flip side, many of these locales also have strengths such as community interdependence and rich cultural traditions that can bolster resilience among residents.

Here is more guidance for working credibly in rural communities:

Learn about the area

Every rural community is unique: A farming community in North Dakota is not at all like an Indigenous fishing community in Alaska. As you would with any other patient from another culture, take time to understand where your patients live. “Even if you can’t travel there, find ways to investigate, whether reading or directly connecting with local leaders like teachers or clergy,” said Cindy Juntunen, PhD, associate provost for research and dean of graduate studies at California State University, Monterey Bay, who has researched rural communities and formerly taught at the University of North Dakota.

Another way to grow your competence is to consult with other mental health or medical providers in the community or surrounding area, said Paul Korte, PhD, a clinical psychologist who was raised on a farm and now works in Columbia, Missouri, serving many rural patients. Along with historical factors that the community is built on—such as industries or shared traumas, including weather or economic events—try to understand community norms. Who do people typically turn to for help during difficult times? How do they view outsiders? What values or beliefs shape how the community sees mental health? “Learn about factors that enrich the community, along with

areas of potential sensitivity,” said Korte, who is also vice chair of APA’s Board of Professional Affairs.

Any effort to understand the local landscape can build credibility and trust with patients. “Face time can help you understand the community but also help the community understand you’re a safe and trustworthy person,” said Diana Prescott, PhD, a clinical psychologist in the small town of Hampden in rural Maine.

Address any implicit bias

Assumptions and implicit bias about rural life can impair the therapeutic alliance. “We’ve been training psychologists about racial and gender bias for decades, but we haven’t applied the same critical lens to rural communities,” said Juntunen. It is important to explore whether you carry stereotypes about rural life, which may arise through media representations or political divides.

Along those lines, you may discover mindsets and norms within a specific community you are working in—but don’t assume homogeneity. “Not everyone who comes from a rural community is a cookie cutter of the same thing,” said Shannon Goecke-Watson, PsyD, a counseling psychologist in Apple Valley, Minnesota, who has worked in counties with no fellow psychologists. “There can be a whole wide range of mindsets and identities even within these communities.” Rather than making assumptions about an individual’s political or religious beliefs, for example, ask questions, allow the patient to share their unique experience, and as always do not allow your own beliefs to interfere with treatment.

Even focusing too much on the challenges of rural communities can affect the therapeutic relationship. “We often assume the barriers are

the most prominent issues affecting rural individuals, or that if we could just uplift them, they’d be as good as urban communities,” said Douglas Knutson, PhD, an associate professor of counseling psychology at Oklahoma State University. “While these communities face difficulties, a negative mindset undermines the coping skills, strengths, and neuroflexibility so many rural individuals possess.”

Establish trust

Seeking out therapy can be intimidating for anyone. Take care to build trust and credibility to improve the likelihood of a strong therapeutic alliance. Rural providers say it is common for rural patients to feel skeptical of health care professionals, especially if they have ever felt overlooked or misunderstood. Taking a collaborative approach to care can reduce any intimidation or power struggles. “I often tell my patients they’re the expert on themselves, and that together, we can work to reduce distress and improve coping and quality of life,” said Emily Selby-Nelson, PsyD, director of behavioral health at Cabin Creek Health Systems in West Virginia.

If you have any connection to a rural community—you grew up in a small town or visit one frequently to see family—consider talking through that with the patient to build rapport and familiarity. If not, be honest—and share ways you looked into what it is like where they live. “People want to know if you can relate to them, and they may open up more if they feel you understand their language or context,” said Korte.

Psychoeducation can also help reduce stigma and increase rapport. Explain that as a psychologist, you have experience helping patients navigate many different issues—from

clinical diagnoses to people struggling with sleep, parenting, or chronic illness. “Explain that psychology is so much more than treating mental illness,” said Korte. “Our focus is much more on helping individuals change their thinking and behaviors in order to live healthier, happier lives.”

Consider context in assessment

A thorough biopsychosocial assessment is especially key in rural contexts: By the time a patient comes to you—whether stigma, transportation issues, or a long waiting list kept them from care—their issue may have become more severe. Whether driven by concerns about stigma, confidentiality, or cost, psychological care is often delayed—and in a mental health crisis, there is not always a place to go. “We’re seeing more clinics and hospitals in rural communities shutting down due to funding issues, so people have to travel hours if not states away for mental health treatment,” said Goecke-Watson.

Diagnostic sensitivity is also important. Understanding contextual factors that can impact mental health in rural communities can inform your diagnosis and treatment plan. “If a patient comes to you with anxiety and depression, for example, they may be facing unique economic difficulties related to seasonal work, which should be taken into consideration,” said Kilwein. What you may initially see as depression or



Encouraging patients to identify their community’s strengths and available support fosters a balanced, culturally informed approach to their well-being.

grief may actually be tied to adjustment disorder, for example.

The impact of historical trauma or shared difficulties should also be taken into consideration during an assessment. Many rural communities face shrinking populations and waning resources, which can leave rural individuals feeling forgotten, Korte said. Difficult events may be more life-altering for some rural patients. “Many rural communities are connected to land or industry their families have been part of for generations, so it’s part of their identity,” said Juntunen. Failed crops, repossessed land, or lost markets and buyers may pose not only an

economic and career crisis but an emotional, identity-based issue.

Generational trauma can also have long-lasting effects. Ashley Cole, PhD, an associate professor of psychology at Oklahoma State University, teaches clinical psychology doctoral students about the unique biopsychosocial context of rural Oklahoma to prepare them for local clinical work. One essential touchpoint is the tribal history of being forcibly removed from their original land to Oklahoma through the Trail of Tears—a shared historical trauma shown in studies to impact physical and mental health for years to come. For example, Cole’s research has shown children of Indigenous parents who have depression related to discrimination are more likely to experience depression themselves (*Journal of the American Academy of Child & Adolescent Psychiatry*, Vol. 64, No. 12, 2025).

Tailor interventions

While recognizing barriers to care and overall well-being is important

PSYPACT

PSYPACT is an interstate agreement that allows psychologists to practice telehealth or temporary in-person care across state lines. As of January 2026, 43 states are enrolled.

To enroll, you must hold a license in a PSYPACT-participating state and obtain an Authorization to Practice Interjurisdictional Telepsychology (APIT). Learn more about how to expand your practice with PSYPACT at <https://psypact.gov/page/PracticeUnderPSYPACT>.

for cultural understanding, a purely deficit-focused approach can be harmful. As you challenge your own biases, encourage patients to explore the strengths, resources, and benefits of their community.

Help the patient identify community support, such as family, churches, or civic groups. “Ask them, too, about previous experiences of resilience, strength, and success when planning future coping strategies,” said Selby-Nelson.

Be aware of potential limitations in the process. Referrals you typically make in an urban setting—such as support groups for adolescents or specialty care for queer individuals—may not exist in a more rural area. When relevant, help your patient find a solution, whether that is recommending telehealth-based individual or group care with a specialist or partnering with a local clinic or school to encourage the patient to tap into or advocate for expanded services.

Be curious about someone’s day-to-day before making lifestyle recommendations that are not possible or sustainable. For example, for people with insomnia, psychologists often recommend sleep hygiene—including a consistent sleep schedule and a dark, private sleep space. That may not be the best solution. “In many parts of Alaska, for example, we have 24-hour daylight during the summer, and people can’t always afford blackout shades,” said Sara Buckingham, PhD, an associate professor of psychology at the University of Alaska Anchorage. Further, amid a housing shortage and on account of cultural practices, many families share bedrooms.

Be flexible

Flexibility with your traditional workflow is essential. For telehealth, unreliable internet can be a concern.

“Widespread broadband access is not commonplace across the nation yet, especially in rural regions,” said Buckingham.

Try to adapt visits to meet your patients’ needs. Address privacy concerns if a patient needs to attend a therapy appointment in a public setting, such as a school or library.

Depending on the primary industry of the community you serve, you may need to offer extended hours when your patients are most available and potentially keep open a few extra “walk-in” slots when they are traditionally busy in case of bad weather. Be flexible about cancellations. “If it’s been raining for days, a patient may need to miss an appointment to catch up on outdoor work,” said Korte.

Stay connected

Treating rural patients is rewarding, but the work can be isolating. To prevent burnout, build relationships with other providers serving in the same area, whether master’s-level therapists or physicians.

Selby-Nelson encourages finding ways to stay connected and consult with other psychologists, especially those who also treat rural patients. If you do not know other professionals who work in this space, consider joining APA Div. 31 (State, Provincial & Territorial Affairs) Rural Health Section for practice support and networking opportunities.

Staying connected can also expand the reach of your work. Use your expertise to advocate for communities in need, whether teaching psychologists-in-training how to think about practice in rural mental health or getting involved in a professional organization dedicated to rural needs. “Issues affecting rural communities are a public health issue,” said Knutson. “While individual therapy

helps, psychologists are also uniquely equipped as advocates.” ■

FURTHER RESOURCES

Rural Health Information Hub
www.ruralhealthinfo.org/

APA Div. 31 (State, Provincial & Territorial Affairs) Rural Health Section
www.apadivisions.org/division-31/about/rural-health

Indian Health Service
<https://IHS.gov>

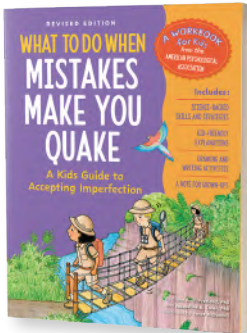
Underserved rural communities: Challenges and opportunities for improved practice
 Juntunen, C. L., & Quincer, M. A.
 In Casas, J. M., et al. (Eds.)
Handbook of Multicultural Counseling
 Sage, 2017

A case for rural community resilience: Significant urban/rural cohort differences in COVID-19 and mental health hospitalizations in Oklahoma
 Knutson, D., et al.
Journal of Rural Mental Health, 2025



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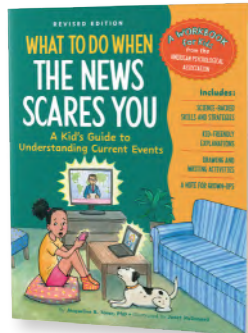
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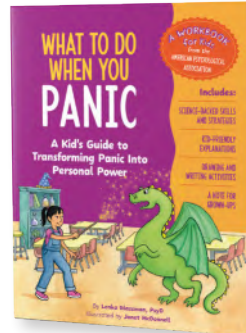
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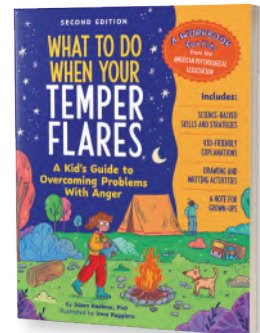
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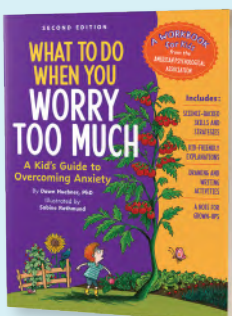
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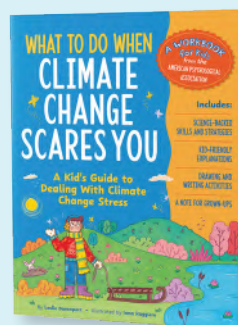
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Americans More Concerned Than Excited About AI

The biggest worry is that AI will erode human skills and connections

BY TORI DEANGELIS

50%

Percentage of U.S. adults who say they're more **concerned than excited** about **the increased use of AI** in daily life, up from **37%** in **2021**. Similarly, **57%** of U.S. adults rate the **societal risks of AI** as high, compared with **25%** who see the potential benefits as high.

50%

Percentage of U.S. adults who say AI will worsen people's ability to **form meaningful relationships**. However, **46%** are open to using AI to provide **mental health support**, and many more endorse its use for heavy analytic purposes like weather forecasting (74%) and developing new medicines (66%).

53%

Percentage of U.S. adults who think AI will worsen people's ability to **think creatively**. Likewise, **38%** say it will reduce people's ability to **solve problems**, and **40%** say it will worsen people's ability to **make difficult decisions**. (That said, between 16% and 20% of people remain uncertain about these issues.)

73%

Percentage of U.S. adults who think it is extremely or very important for people to **understand what AI is**. That view is endorsed by **86%** of those with a postgraduate degree, **83%** of those with a bachelor's degree, and **63%** of those with a high school diploma or less.



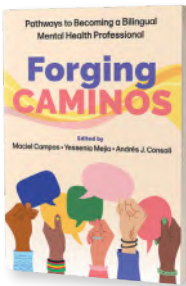
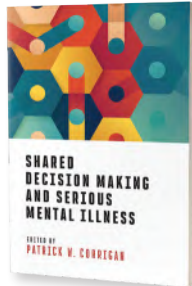
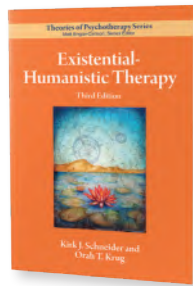
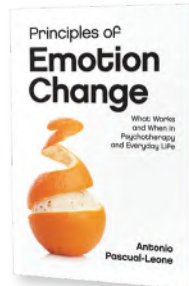
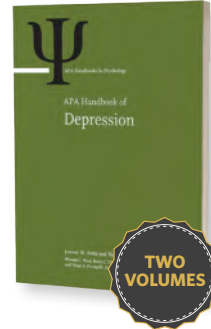
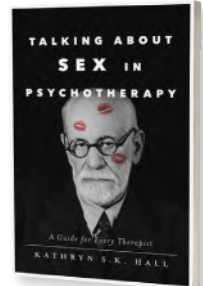
Source: Kennedy, B., et al. (2025). How Americans view AI and its impact on people and society. Pew Research Center survey conducted among 5,023 U.S. adults June 9–15, 2025. Available at <https://www.pewresearch.org/science/2025/09/17/how-americans-view-ai-and-its-impact-on-people-and-society/>



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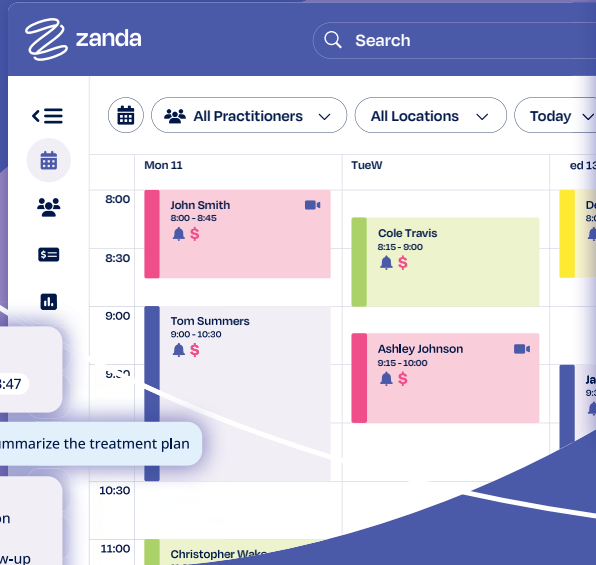
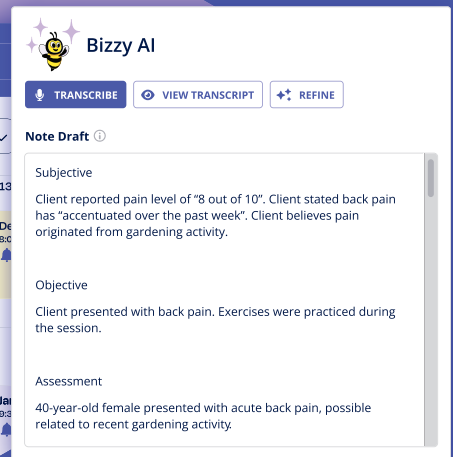
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Can you summarize the treatment plan

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