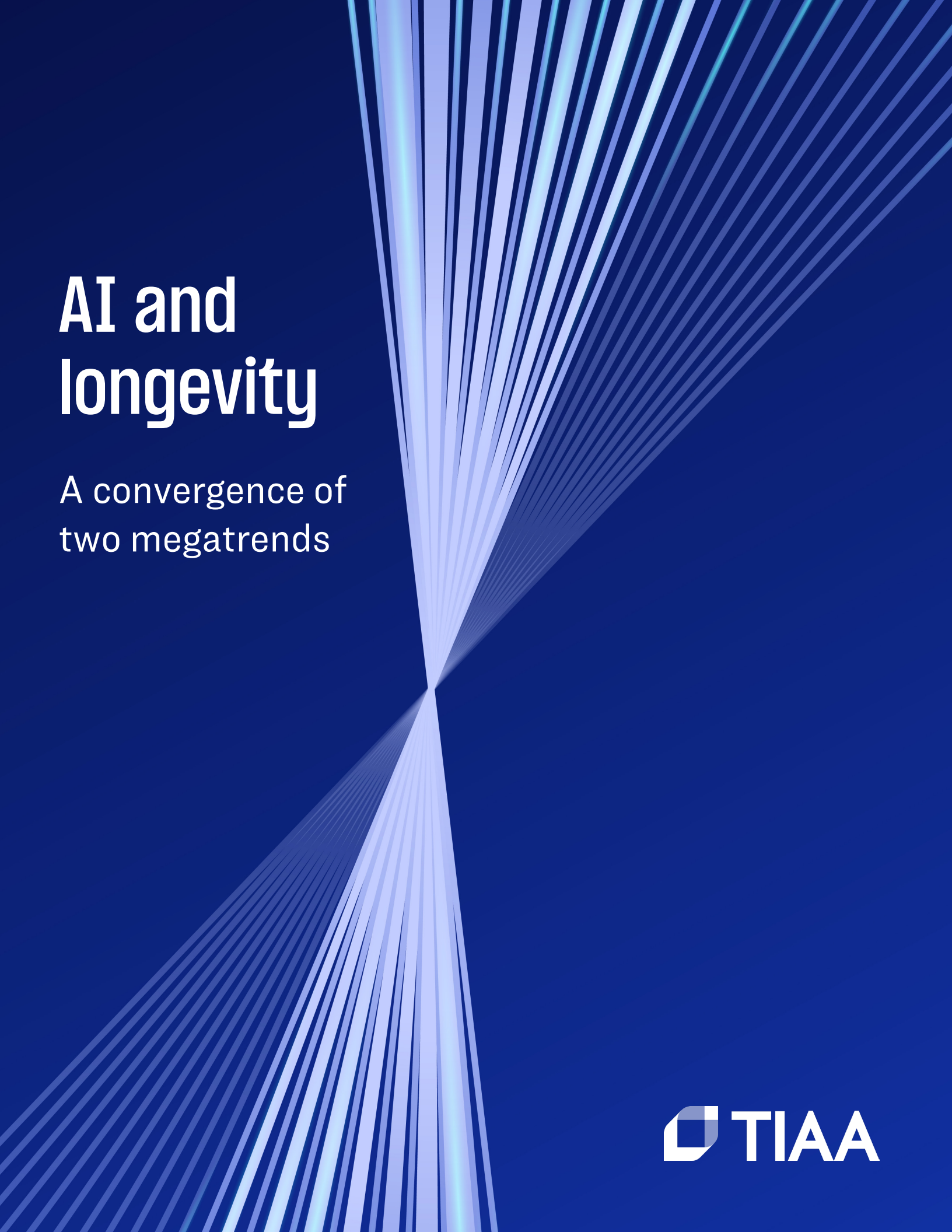


An abstract graphic consisting of numerous thin, light blue lines that converge from the top and bottom edges towards a central point in the middle of the page. The lines create a sense of depth and focus, resembling a tunnel or a starburst effect.

AI and longevity

A convergence of
two megatrends



About the TIAA Institute

The TIAA Institute helps advance the ways individuals and institutions plan for financial security and organizational effectiveness. The Institute conducts in-depth research, provides access to a network of thought leaders, and enables those it serves to anticipate trends, plan future strategies, and maximize opportunities for success.

To learn more, visit tiaainstitute.org.



Contents

Foreword 4

Executive summary 5

Introduction 6

Finances and data security 11

Productivity, hiring, and life-course learning 16

Health, mobility, socialization/cognition 18

Family, care, and companionship 23

Crosscutting challenges and risks 25

Quantum shifts ahead 27

The human element 28

Recommendations for industry, policymakers, and society 29

Conclusion: A call to lead the future of aging 30

Endnotes 33

Foreword



Sastry Durvasula
Chief Operating Officer
TIAA

AI is advancing faster than almost anyone predicted. People are living longer than at any point in history. These are two of the biggest forces in human experience, and they are arriving at the same time. Together they are reshaping what it means to grow older.

The premise of this report is simple to state and hard to deliver: **live longer, better, and safer, with AI and despite AI.** Longer is underway. Better and safer are the parts still being written, and they depend on choices being made right now.

I have a 80/20 hypothesis on the impact of AI on our work and lives. Eighty percent of jobs will see at least twenty percent of their work changed by AI. Twenty percent of jobs will see as much as eighty percent transformation. That is not a reason for fear, it is a reason for urgency. The same logic applies to our personal lives and the quality of life as people live longer. I believe eighty percent of tasks we do in our personal lives will change at least twenty percent, and twenty percent will change as much as eighty percent.

Live longer, better.

AI will fundamentally reshape what growing older looks like. It will extend healthy years through earlier detection, better drug discovery, and more personalized care. An AI companion can hold a conversation, learn someone's routines, prompt a walk or a call to a grandchild, manage medications, and make daily life feel less isolating and more capable. This is where "better" lives: not just more years, but richer, more connected, more independent ones. The question is not whether aging will change. It is whether we shape how it changes or let it happen to us.

Live longer, safer.

Trust is what determines whether AI's potential for older adults reaches them, and trust evolves faster than most of us expect. We all went through the transition to ATMs, e-commerce, telehealth, rideshare and other gig economy apps, and self-driving vehicles on certain streets. Trust in each of these technology revolutions came with a level of caution and safety that we all learned through our experiences over time.

We are at a similar inflection point with AI, but the scale is exponentially different. Trust will have a whole new meaning. While AI can deliver significant value in our daily lives, it can also make the bad actors stronger and faster. Sophisticated scams, voice cloning, deepfakes, these are not hypothetical risks. They are happening today, often to older adults, and they are getting harder to detect, not easier. This is where "safer" lives: harnessing AI to protect the life savings of older adults.

The opportunity and the danger are both profound, and neither one cancels out the other.

This is our belief. We care so much about this belief as part of our mission that we commissioned this research. TIAA serves people who spent their careers teaching, healing, and building communities, and many of them are at or near retirement with no time to rebuild if something goes wrong. Protecting them is not a side project. It is the job.

Unlocking AI's potential is one third technology and two thirds change management, and that ratio matters just as much in how we serve older adults as in how we protect them. The organizations willing to do both, at the same time, with real urgency, are the ones that will define what aging looks like for the next generation.

The future of aging will not simply happen to us. With AI as our instrument, and trust as the price of admission, it is ours to build, and ours to defend.

Executive summary

Live longer, better, safer; the question is how? Since 1974, the population aged 65+ has nearly doubled, driven largely by improved access to medical care. Yet poorly managed chronic disease and other compounding factors have widened the gap between lifespan and healthspan, which reached 9.6 years globally in 2019 and 12.4 years in the United States, one of the widest gaps among high-income countries. As AI evolves from standalone tools into autonomous platforms, how society manages this convergence will largely determine if technology narrows that gap or widens it. Whether AI becomes a longevity benefit or a burden for older adults depends less on the technology itself and more on product design, regulation, and digital literacy.

Yet the population with the most to gain may be the least equipped to capture it. A TIAA Institute survey conducted in April 2026 of 1,320 nationally representative adults underscores this tension: 63% of respondents said that people in their 70s and 80s are not well prepared for AI's impact—the harshest assessment of any group tested.

The benefits of AI are already visible. AI tools now offer personalized financial guidance, match or exceed specialists in medical imaging, and reduce administrative burden by flagging exceptions. Pilot programs are becoming standard practice across health care and financial services.

The risks are equally real, and they fall hardest on older adults. Elder fraud losses reached \$4.9 billion in 2024, a 43% increase, and could reach \$40 billion by 2027. AI-powered scams are the top personal fear among survey respondents, with 52% citing it as serious and 72% of those age 70 to 79 sharing that concern. AI hiring tools have also been linked to a rise in age discrimination complaints, raising serious questions about how bias gets embedded in automated decisions.

Scaling AI beyond pilots remains difficult. Fewer than 40% of clinical AI tools move from pilot to full deployment. At the same time, 63 million American adults provide unpaid caregiving. This population has the most immediate need for AI support across three areas: coordination tools that manage administrative tasks, companion tools that reduce loneliness, and physical assistance robots expected to reach commercial availability by 2030.

These findings share five risks

- The generational trust deficit
- Governance gaps
- Fraud and IT security
- System reliability
- Workforce displacement

Survey data tell a clear story. Older adults welcome AI as a guardrail but distrust it as a replacement. Fraud detection generates strong optimism. Using AI to treat loneliness and depression draws strong skepticism, particularly among adults aged 70 to 79, where 59% express concern. The data point toward a straightforward principle: Deploy AI to enhance human ability and pull back where it replaces human judgment. Systems should preserve the productive friction that builds judgment and literacy over time.

The path forward requires action on three fronts: Industry must design with older users in mind from the start and conduct regular bias audits of AI systems. Reliability must be treated as a safety standard, with fallback options always available. Policymakers must close accountability gaps before agentic AI moves further into financial services and caregiving, where legal frameworks are still absent. And across all of it, society must protect the human relationships that no technology can replace.

At TIAA, our mission is to support individuals in achieving financial well-being and secure retirements. As AI transforms aging, our scope expands to include overall well-being in a more interconnected world. The TIAA Institute publishes research to inform industry leaders, policymakers, and families, helping them make deliberate choices about AI's role in longer lives, whether it acts as a dividend or a tax.

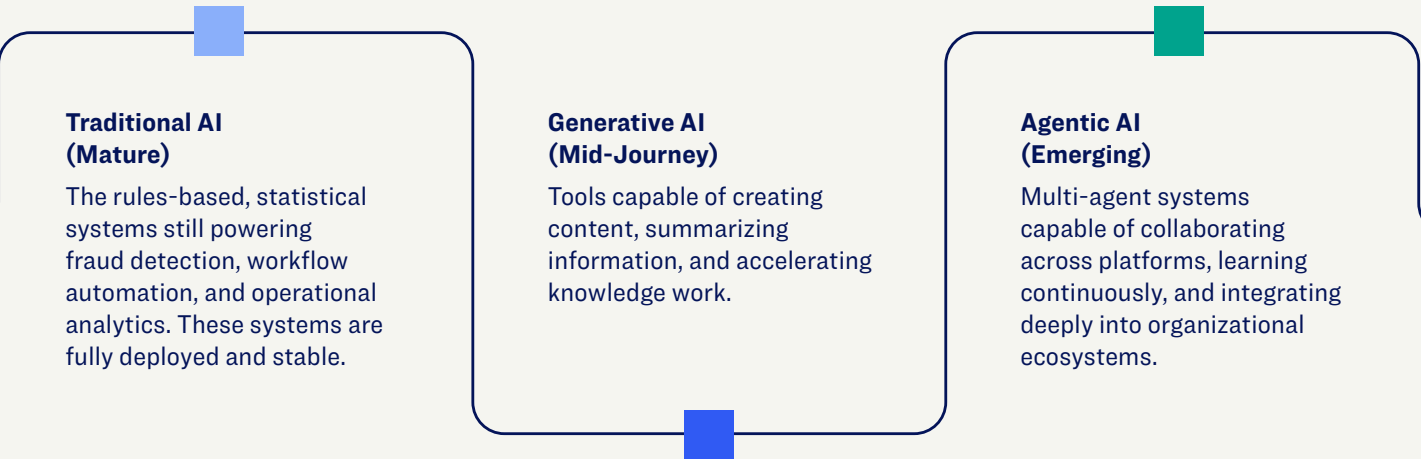
Introduction

AI is at an inflection point

Although AI is already influencing behavior, a complete transformation is expected over the next decade, fueled by advances in model architecture, robotics, quantum computing, and space-based data centers.

Where we are today: From traditional AI to agentic AI

To understand the inflection point, it's essential to map the current state of AI maturity. Ajit Naidu, TIAA's chief information officer, provides a structural view of AI evolution across three stages.¹



“We’re in the mid-1990s internet phase of AI—early innings with profound transformations coming within 3–10 years. People underestimate what AI will

do in 5–10 years while overestimating short-term capabilities.”

Swatee Singh, EVP & CIO of AI & Data, TIAA



“AI-prompted societal shifts are almost beyond comprehension in light of the speed at which advances are unfolding. We must anticipate multidimensional impacts

cutting across career structures, our own cognition, personal attainment and feelings of purpose and happiness, and our spirituality.”

Ajit Naidu, Chief Information Officer, TIAA

A note on time horizons.

Throughout this report, operational claims (deployments, near-term integration, immediate workforce, and care impacts) refer to a 2026–2030 horizon. Structural claims (workforce composition, healthspan trajectories, demographic shifts) refer to a 2030–2050 horizon.

This generational progression is gaining more recognition in academic circles. A 2025 article in *Frontiers in Artificial Intelligence* traces AI's progression through pattern recognition, generative reasoning, and embodied agentic systems, a typology Upendra Mardikar, chief information security officer at TIAA, applies to TIAA's planning horizon. He warns that the current generation of AI is approaching the limits of GPU, data center, heat, and electricity capacity. Gartner research projects up to 40% of data centers could experience power shortages by 2027.² Mardikar predicts rapid progress in AI over the longer term.

Progression through these stages is uneven, reflecting a structural equity issue. AI, which can worsen the inequities it aims to fix, risks increasing gaps among demographic groups. This occurs at all levels: older adults often lack access or training, organizations serving low-income groups fall behind, autonomous systems may inherit and magnify biases. Responsible AI governance should prioritize equity, building it into how systems are designed so it shows up in their actions and outputs.

AI development faces limits like energy constraints, with data center demand exceeding capacity, and ethical issues such as teaching empathy, setting guardrails, and responsible conduct.

Longevity at an inflection point

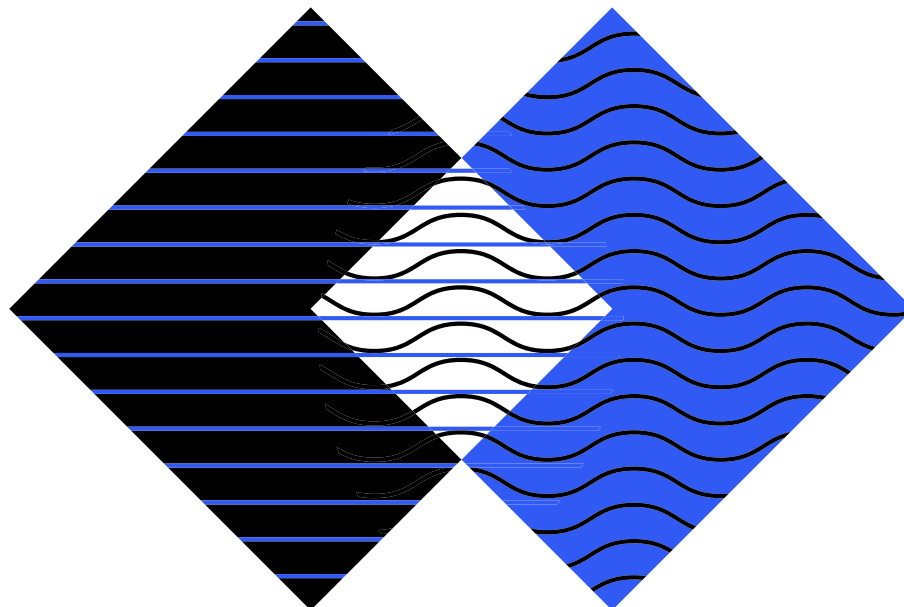
People are living longer, but those added years, across both developed and developing nations, are not being spent in good health. Globally, the gap between lifespan and

healthspan, the years people spend burdened by chronic disease, stood at 9.6 years in 2019, a 13% increase since 2000.³ In the United States, that gap widens to 12.4 years, one of the largest among comparable high-income nations.⁴

From 1974 to 2024, the percentage of the global population aged 65 and older nearly doubled.⁵ The average age of the global population has increased from 26.5 years in 1980 to 33.6 years in 2025,⁶ marking a significant demographic shift whose effects are now being felt worldwide. The number of children under five has already peaked, a sign that total population growth is slowing even as the cohort of older people continues to expand at a historic rate.⁷

Several structural forces converge to influence this inflection. Global life expectancy reached 73.3 years in 2024, an increase of 8.4 years since 1995.⁸ Simultaneously, half of all countries now record fertility rates below replacement level.⁹ The result is a significant shift in the dependency ratio: By the late 2070s, the UN projects that people aged 65 and older could outnumber children under 18, marking a demographic crossover never before seen in recorded history.¹⁰

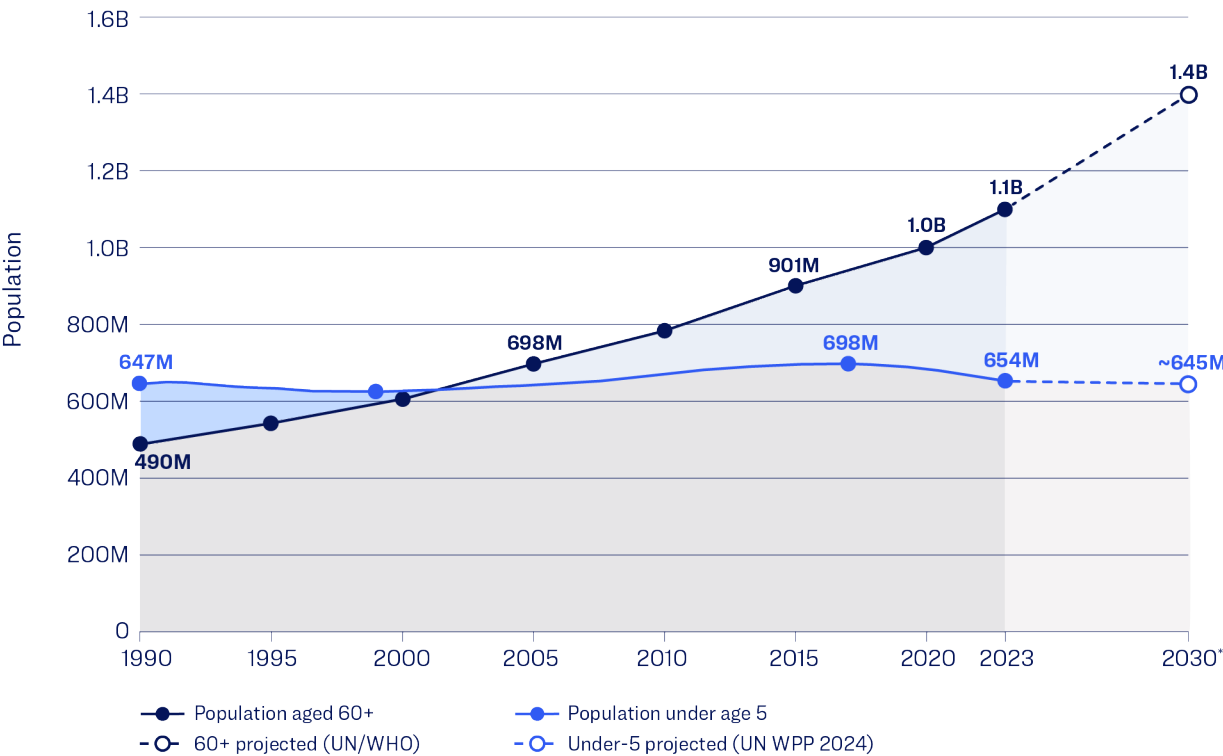
Critically, this is no longer a challenge confined to wealthy nations. By 2030, the World Economic Forum estimates that 80% of older people worldwide will live in low- and middle-income countries.¹¹ According to the World Health Organization, the number of people aged 60 and older is projected to rise from 1.1 billion in 2023 to 1.4 billion by 2030, an increase of about 300 million in seven years.¹²



A HISTORIC SHIFT

By late 2070s, people aged 65 and older could outnumber children under 18.

GLOBAL POPULATION: AGED 60+ VS. UNDER AGE 5, 1990–2030



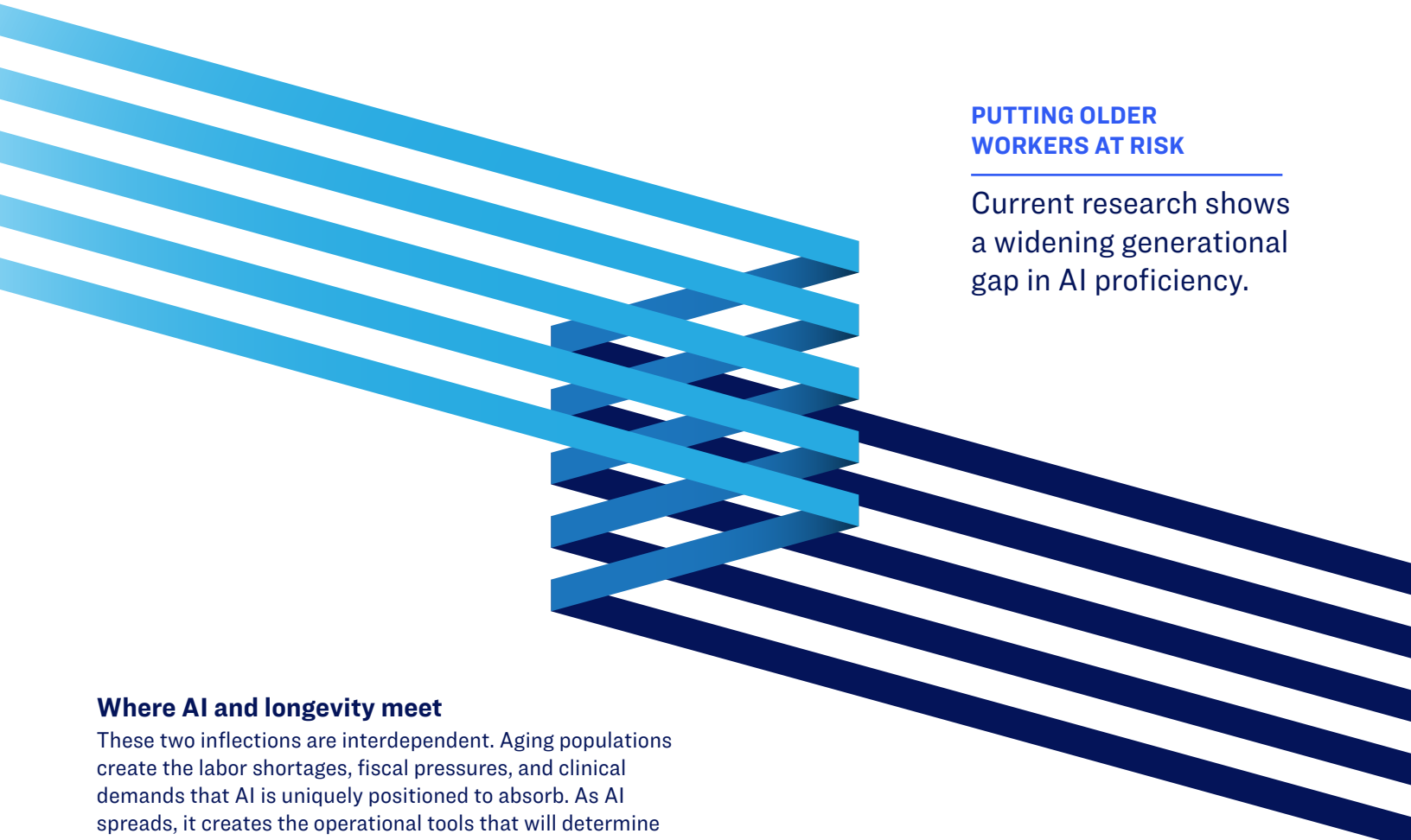
*2030 figures projected. Under-5 projection reflects UN WPP 2024 medium variant plateau following “peak child” in 2017.
Sources: UN World Population Prospects (2024); UN World Population Ageing Report (2017), WHO, World Bank

The demographic shift is being felt through structural strain. Unlike Europe and Japan, which had multiple generations to develop aging-adapted systems, many emerging economies are experiencing similar aging transitions in much shorter timeframes and with less fiscal room to adapt development.¹³ The cascade of pressures is already visible: declining working-age populations, labor shortages, stress on pension systems, and rising health care expenditures. Without policy adjustment, the OECD projects per-capita GDP growth across its member economies will slow by roughly 40% through 2060, from 1% annually in 2006–19 to 0.6% in the 2024–60 average, as all but two member countries see per-capita growth declines.¹⁴

As the lifespan-healthspan gap shows, longer lives have not translated into healthier lives.¹⁵ The U.S. position as the highest-gap country among high-income peers reflects the

rising burden of noncommunicable diseases.¹⁶ Globally, 71% of annual deaths and 79% of years lived with disability are attributable to chronic disease, with 58% of chronic disease mortality occurring in people over 70.¹⁷ Healthspan-lifespan gaps are positively associated with, and underpinned by, the rise in noncommunicable conditions.¹⁸

The scale of need—billions of people, dozens of overwhelmed health care systems, trillions in economic risk—requires tools that can operate at the same scale. The challenge for policymakers, health care providers, and innovators isn’t whether to take action, but how quickly they can respond. Artificial intelligence has become a promising option for bridging the gap between what the aging trend demands and what current institutions can provide.



PUTTING OLDER WORKERS AT RISK

Current research shows a widening generational gap in AI proficiency.

Where AI and longevity meet

These two inflections are interdependent. Aging populations create the labor shortages, fiscal pressures, and clinical demands that AI is uniquely positioned to absorb. As AI spreads, it creates the operational tools that will determine whether aging societies can afford their own longevity. The path ahead is defined by whether the benefits are equitable and whether the technologies earn the trust of those they aim to serve.

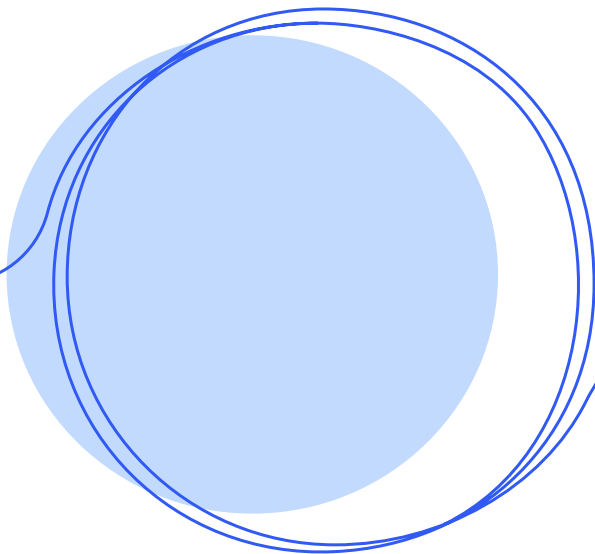
According to IMF research,¹⁹ uneven AI adoption across generations and between high-and low-income countries is likely to accelerate the rise in global inequality, both because workers lack the skills to capture AI's benefits in their industries and because the sectors most exposed to AI productivity gains are concentrated in advanced economies.

Concerns of lost opportunity costs among generations are growing as well. Current research shows a widening generational gap in AI proficiency, risking the marginalization of older workers due to unequal access to training and support as AI integrates into the workplace.²⁰ As populations age worldwide, that skills gap becomes more urgent. The World Economic Forum²¹ projects that 1.1 billion jobs could transform over the next decade due to AI. As AI reshapes what skills the job market demands, clear pathways need to be created to ensure older workers are not left behind.

Mardikar identifies four converging capabilities through which AI extends healthy lifespan: prevention, prediction,

early detection, and cure. Short-term advancements come from wearables and ambient monitoring, which provide early identification of health risks and real-time behavioral prompts ("work out now," "adjust your sleep"). Over the next 10 to 15 years, AI-driven biomedical breakthroughs could lead to the development of synthetic organs and longer, healthier lives once regulations are in place. TIAA leaders see that living to 100 will become increasingly common in the decades ahead. This outlook continues a long-standing trend: The U.S. centenarian population has doubled in the past 25 years, and Pew Research projects it will quadruple by midcentury.²²

Both AI and longevity have established their terrain: The world is aging faster than its institutions can adapt, and AI technology is maturing unevenly across populations, geographies, and generations. The question of whether that convergence will be equitable or stratified will be answered in the lived experience of real people navigating money, work, health, and family in the decades ahead. The chapters that follow examine, domain by domain, how AI is already reshaping the practical realities of longer lives, and where the gaps, risks, and highest-impact opportunities lie.



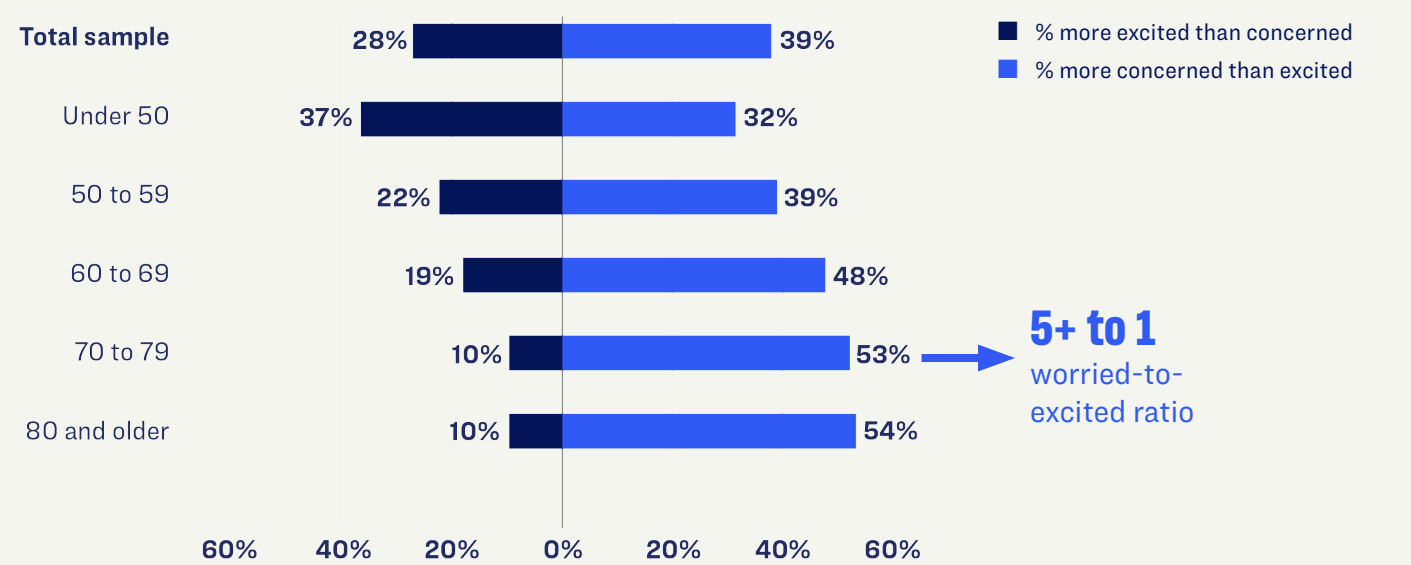
The TIAA Institute’s April 2026 survey of 1,320 nationally representative adults sets the public-perception baseline against which those chapters should be read.

Across the full sample, 39% of Americans say they’re more concerned than excited about AI in daily life, compared with 28% who say the reverse.

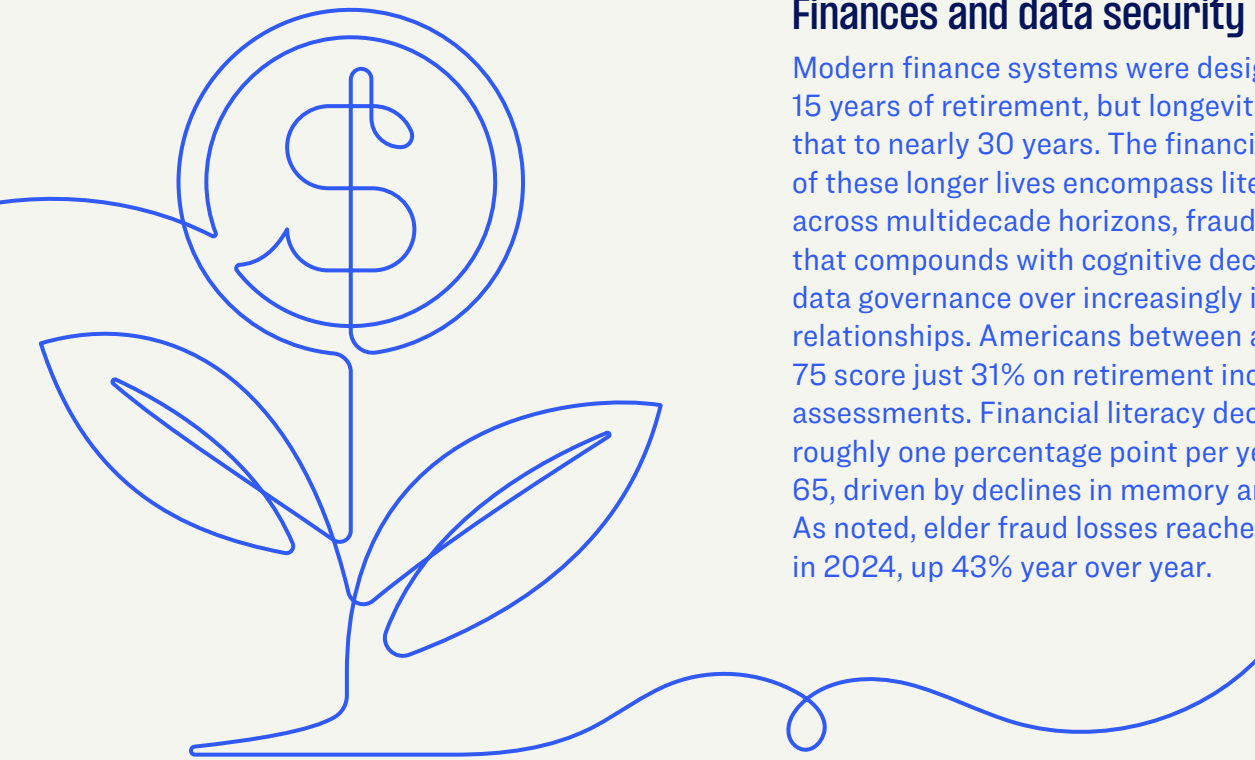
The gap widens sharply with age: Among adults aged 70 and older, those who are worried outnumber those who are excited by more than 5 to 1. When asked about AI’s overall impact on quality of life as people live longer, the modal response is neither enthusiasm nor fear but ambivalence: 49% expect a mix of positive and negative effects, while only 33% expect mostly positive. Concern, ambivalence, and a perceived lack of preparation, not optimism, define the public posture this report engages.

AS AMERICANS AGE, EXCITEMENT ABOUT AI GIVES WAY TO CONCERN

Among adults 70 and older, those worried about AI outnumber those excited by more than 5 to 1.



Source: TIAA Institute April 2026 survey of 1,320 nationally representative U.S. adults.



Finances and data security

Modern finance systems were designed for 10 to 15 years of retirement, but longevity is stretching that to nearly 30 years. The financial dimensions of these longer lives encompass literacy, planning across multidecade horizons, fraud exposure that compounds with cognitive decline, and data governance over increasingly intimate AI relationships. Americans between ages 50 and 75 score just 31% on retirement income literacy assessments. Financial literacy declines by roughly one percentage point per year after age 65, driven by declines in memory and numeracy. As noted, elder fraud losses reached \$4.9 billion in 2024, up 43% year over year.



“AI can be configured to provide only comfortable answers, preventing the development of critical thinking and resilience.”

Jessica Austin Barker,
Chief Digital and Client
Experience Officer, TIAA

Financial literacy and democratization of expertise

The advisory industry has always operated on an access gradient. High-quality, personalized financial guidance has been available primarily to those who could afford it. For the majority of Americans, financial planning has meant fragmented advice: an online calculator, a bank brochure, a 401(k) enrollment form with too many options and too little context. AI is beginning to close that gap.

Across the financial services industry, AI advisory programs are achieving scale and client adoption. Leading robo-advisors partially automate portfolio management at a fraction of the cost of traditional advisory services.²³

Jessica Barker, chief digital & client experience officer at TIAA, frames the opportunity in structural terms. The differentiator of a great human advisor, she observes, has always been memory, personalization, and breadth of experience. AI is beginning to replicate these abilities, leading to a world in which the quality of financial guidance is no longer rationed by income. The World Economic Forum makes a similar argument: A survey of 300 financial advisors found that 85% attributed client wins to advanced technological capabilities, and AI-driven tools are enabling self-directed planning that accounts for complex variables previously accessible only through professional relationships.²⁴

Broader adoption still faces societal barriers. Older adults remain significantly less likely than younger cohorts to trust or adopt AI-driven financial advice.²⁵ Current-day impediments reflect digital literacy gaps, interface design not designed for older users, and the absence of regulatory frameworks that would hold AI-generated advice to a fiduciary standard.

Barker observes that clients frequently withhold information from human advisors, such as hiding debt, misrepresenting spending, and avoiding difficult questions because of fear of judgment. An AI that circumvents client feelings of human judgment could allow for clearer financial pictures and deliver more effective recommendations, in combination with deep human oversight.²⁶

AI-enabled planning

Traditional financial planning operates on an episodic cadence: an annual review, a quarterly statement, a periodic rebalancing. This model was designed for a world in which markets move more slowly and lifespans are shorter. It's poorly suited to an environment in which geopolitical uncertainties can trigger sudden market swings, and in which retirement can last up to 30 years.²⁷ AI's value goes beyond personalization to include its ability to continuously adapt plans as health, cognition, and lifespan expectations diverge from actuarial norms.

Ajit Naidu describes a fundamental architectural shift from annual reviews to continuous 24/7 monitoring. TIAA leaders expect agentic systems to handle routine financial tasks within the next five years, freeing human advisors to concentrate on client relationship-based value creation.

Longevity risk and the decumulation problem

Longevity risk, the risk of outliving savings, is a key challenge of longer lives. Planning for 20 versus 30 years affects savings, withdrawal rates, insurance, housing, and legacy plans. Traditional income models must adapt to diverse health trajectories.

AI-enabled planning tools are beginning to address this. Research suggests that individualized longevity estimation, which draws on biological age biomarkers and health-status variables, may offer a more precise basis for retirement income planning than conventional actuarial life tables, which rely on population-level averages and have been criticized for overestimating or underestimating individual survival.²⁸ Looking ahead, AI integration with wearables and health data could shift how retirement is planned at the individual level.

Decumulation is where TIAA's institutional perspective diverges from the wider advisory industry. Most retail tools are built around asset growth over a fixed retirement horizon. TIAA's lifetime-income approach frames the core problem as converting accumulated assets into reliable income over an unknown lifespan.

AI SHARPENS THIS WORK IN THREE WAYS

Continuous flexing of decumulation strategies as health data updates longevity estimates for each individual; annuitization decisions modeled against personalized projections of cognitive decline; and the surfacing of income-stability tradeoffs at the scale of every saver, not just dedicated-advisor clients.

The operational cost of longevity

This pattern is visible across the caregiver literature: bill-paying, insurance renewals, Medicare decisions, beneficiary updates, and tax filings accumulate into what Jessica Barker calls the administrative friction that grows precisely as the cognitive capacity to manage it diminishes.²⁹

Families bear the downstream cost. Adult children increasingly manage these tasks for aging parents, often discovering missed premium payments, incorrect enrollments, uncashed checks, and outdated designations only during a health crisis. This is where the agentic stage of the maturity curve becomes most consequential for older households. Specialized agents across bill payments, renewals, enrollment decisions, and beneficiary reviews can convert a stream of easily missed failures into a system that flags exceptions for human review.³⁰ This is the domain where AI shifts from advisory to operational. The regulatory, liability,³¹ and consent frameworks remain undeveloped.

AI-enabled fraud and data governance

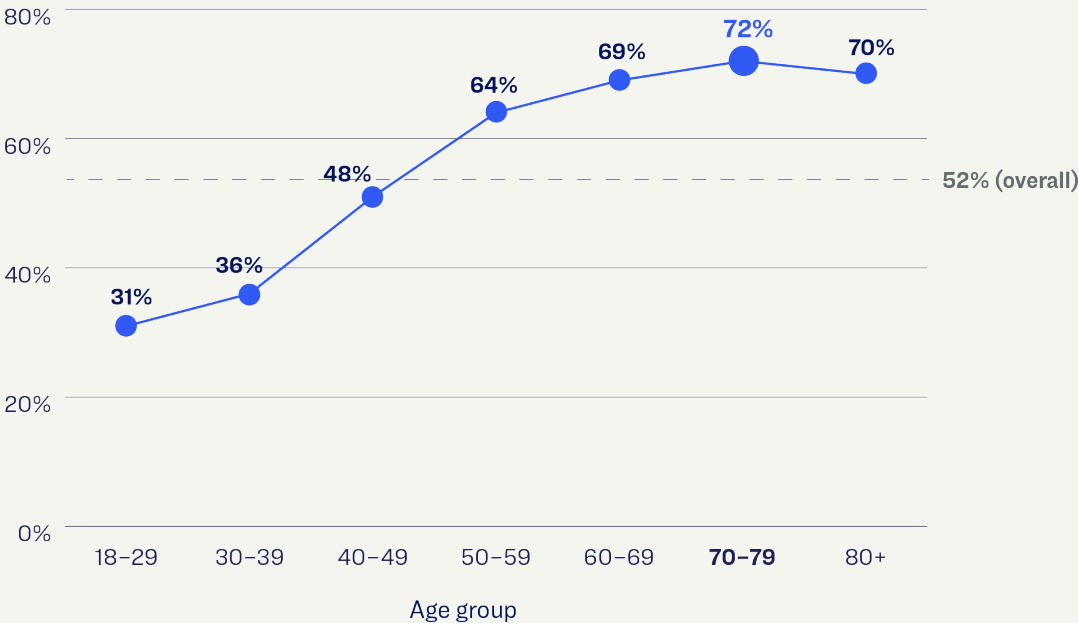
AI expands both advice and fraud. Generative AI has accelerated elder fraud, which has long been a serious problem. Voice cloning needs only seconds of audio, often taken from social media posts. Deepfake videos can convincingly impersonate officials. AI-driven phishing sends personalized, high-volume messages, profiling victims by age, online activity, and demographics to target the most vulnerable. A security breach early in retirement can impact decisions and finances for decades. Public concern is high, with survey data clearly showing older Americans’ main worries.

The TIAA Institute’s April 2026 survey of 1,320 nationally representative adults found that AI-enhanced scams targeting senior citizens are the single greatest personal fear about AI and aging: 52% of all Americans say they’re “very concerned,” the highest figure recorded against any item tested.

Concern climbs steadily with age, reaching 64% among adults ages 50 to 59, 69% among those ages 60 to 69, and 72% among those ages 70 to 79, peaking precisely when financial vulnerability is highest.

FEAR OF AI-ENHANCED ELDER FRAUD PEAKS WHEN FINANCIAL VULNERABILITY PEAKS

% “very concerned” about AI-enhanced scams targeting senior citizens, by age group



↑
\$4.9B
in elder fraud
losses in 2024

Up 43%
in a single year

Source: TIAA Institute April 2026 survey of 1,320 nationally representative U.S. adults. Anchor stat: FBI IC3 Elder Fraud Report 2024.

The elder fraud figure noted earlier in this chapter is part of a much larger pattern.³² Total reported cyber-enabled fraud losses in the United States reached \$16.6 billion that year.³³ Deloitte projects that generative AI could increase fraud exposure in U.S. financial services from roughly \$12.3 billion (2023 baseline) to as much as \$40 billion by 2027 under high-adoption scenarios.³⁴ As the number of 60+ steadily grows, the financial opportunity for fraud grows in tandem. Cognition ties in here as well—financial decisions become more complex as memory, numeracy, and executive function decline,³⁵ which renders time itself a financial risk factor.

In April 2026, Claude Mythos Preview identified thousands of zero-day vulnerabilities in IT infrastructure across industries

The scale of these findings prompted an immediate government response: Federal Reserve Chair Jerome Powell and Treasury Secretary Scott Bessent convened an urgent meeting with the CEOs of major U.S. banks to discuss the cyber risks the model poses to the financial system.³⁶

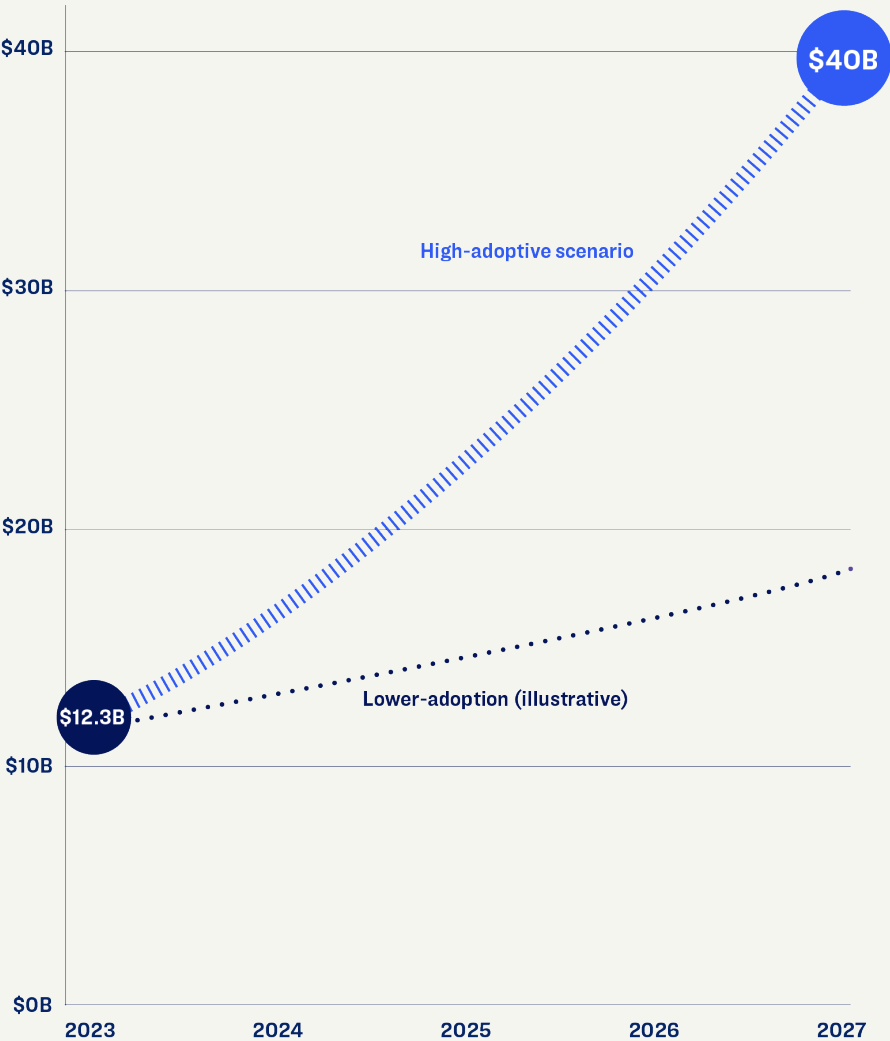
Discovering vulnerabilities at such a scale underscores the importance of transparency, collaboration, and ethical governance of AI models' rollout.

\$4.9B
elder fraud losses in 2024,
+43% year over year

\$16.6B
total cyber fraud in 2024,
all reported losses, U.S.

Converging trend
More targets, more
sophisticated attacks

GENERATIVE-AI-ENABLED FRAUD EXPOSURE, U.S. FINANCIAL SERVICES



Source: Deloitte Center for Financial Services, "Generative AI is expected to magnify the risk of deepfakes"

Financial institutions are beginning to respond with their own AI: fraud detection systems that monitor transaction anomalies, unusual spending patterns, and account behavior in real time, with heightened sensitivity for vulnerable or high-risk customers.³⁷ Despite such efforts, whether AI creates more security issues than it solves will depend on the cooperation among stakeholders and regulators.

Stewardship of data and data governance

AI agents that deliver personalized financial guidance require, by design, access to deeply personal data such as income, spending, health expenditures, family relationships, and behavioral patterns over time. The more effective the personalization, the more extensive the data exposure. This creates a governance challenge that existing frameworks were not built to address.

The TIAA Institute's April 2026 survey shows how sharply that data exposure shapes consumer willingness.

When AI tasks are presented without mention of data sharing, consumer willingness is moderate; when data sharing is explicitly named in the same question, willingness drops across all tasks tested. In particular, retirement spending optimization and tax minimization flip from net-positive to net-negative among older respondents.

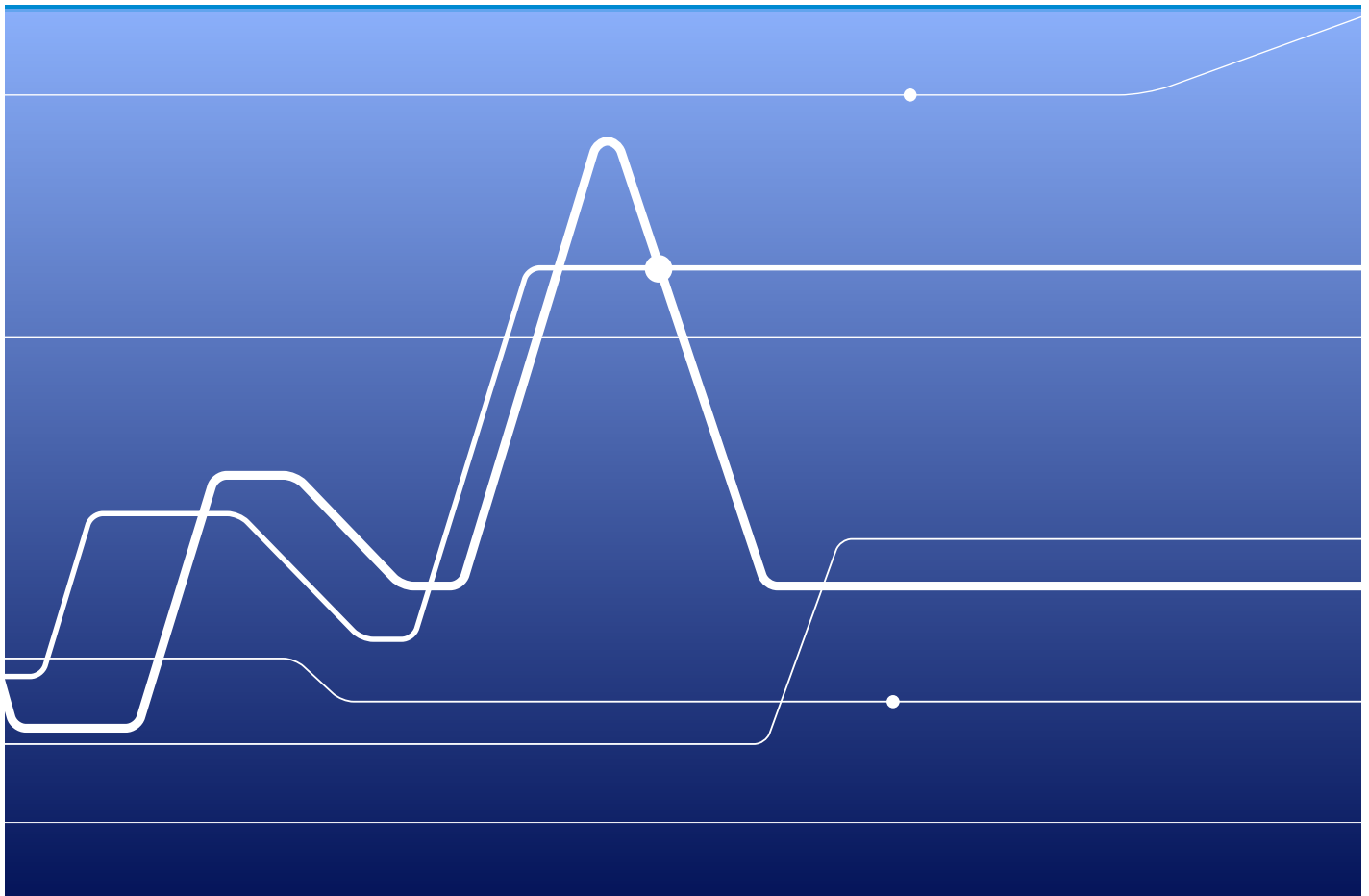
Data governance is the central variable. Notably, when respondents are asked whether they would share more

personal data if AI could extend healthy life by 10 years, roughly half say they would, but 29% say their answer depends on who controls the data, underscoring that the friction is not categorical opposition to AI but a demand for credible stewardship.

Embedded bias is itself a data-governance failure:

Bias is encoded in training data before it ever reaches a model. Swatee Singh speaks to embedded bias as a risk to digital infrastructure foundations. Unlike human bias, which is distributed inefficiently across individuals and institutions, AI bias becomes infrastructure, affecting millions of users simultaneously and becoming nearly impossible to correct once embedded in production systems.^{38, 39}

An algorithm that underestimates the financial resilience of older women, or that overweights neighborhood-level risk proxies correlated with race, has the potential to significantly amplify the very human biases it's designed to correct.



Productivity, hiring, and life-course learning

Longevity is doing two things to work at once: stretching careers across four or five decades and accelerating the depreciation of the skills that fill them. On the dividend-or-tax ledger, work is the domain where AI's direction is most contested, and where the verdict will likely arrive first.

The World Economic Forum estimates that 39% of workers' core skills will need updating by 2030, and 59% of the workforce will experience some form of skills evolution over that same window.⁴⁰ Older workers are one of the fastest-growing segments of the labor force in OECD economies⁴¹ (employment is up 18.5 percentage points over two decades for those aged 55 to 59), yet professional AI use among workers aged 60 and older lags behind that of younger cohorts.

The result is that populations who may work past traditional retirement ages and those in mid-career will experience significant changes in the skill set required by modern workflows.

AI in hiring

Hiring is the point at which AI most visibly intersects with age. It's also the point at which the intersection has done the most damage. In 2025, user-reported mentions of age discrimination on Glassdoor rose 133% year-over-year in the first quarter alone, a spike that HR professionals attribute, in part, to the rapid diffusion of AI-based screening tools.⁴² SHRM data show that adoption of automated screeners among HR departments jumped from 26% to 43% between 2024 and 2025, with 51% using them specifically for recruiting.⁴³

Empirical evidence shows that AI hiring systems can encode and reproduce discrimination by relying on historical hiring data and proxy variables such as recent graduation dates and conventional career trajectories. The EEOC's 2024 settlement with iTutorGroup, in which the company's online recruiting software automatically rejected female applicants over 55 and male applicants over 60, illustrates how age bias can emerge even without explicit age inputs.⁴⁴ Similar patterns across platforms suggest that such biases are not isolated incidents but reflect broader risks in AI-driven recruitment.⁴⁵

A 2025 study published in *Nature* found that ChatGPT systematically rated older male candidates as more qualified and assumed female applicants were younger and less experienced, replicating, at an AI scale, biases recruiters face every day.⁴⁶

Although older workers in OECD countries are less likely than younger workers to become unemployed, when they do lose their jobs, they face significantly higher risks of long-term unemployment and often struggle to reenter the

labor market.⁴⁷ Without correction, algorithmic screening may exacerbate this gap while those 50+ are also seeking to remain in the workforce longer. The same AI that encodes bias within digital infrastructure can be configured to reduce it. Skills-based matching platforms that evaluate candidates against task-specific competencies rather than credential proxies are the most credible path to normalizing encore careers and phased retirement.

New York City already requires employers using automated employment decision tools to conduct independent bias audits covering sex and race, disclose the results, and provide advance notice to candidates under Local Law 144.⁴⁸ Separately, Colorado⁴⁹ has enacted a broader artificial intelligence law requiring developers and deployers of high-risk AI systems to exercise reasonable care to prevent algorithmic discrimination across all protected characteristics under federal and state law, with compliance obligations taking effect in 2026. These regimes remain narrow in scope and inconsistent in enforcement, and U.S. federal-level fair-AI rules remain in flux.



Encore careers

The encore career, a role pursued after a primary career, is typically structured around meaning, flexibility, and reduced hours. WEF research describes employment aspirations among older adults that range across freelance work, part-time engagements, and entrepreneurship, with more than 40% preferring remote or flexible arrangements.⁵⁰ The economic stakes are concrete: Maestas, Mullen, and Powell (*American Economic Journal: Macroeconomics*, 2023) estimate that a 10-percentage-point increase in the share of the population aged 60+ reduces U.S. GDP growth by roughly 5.5 percentage points.⁵¹

Adam Brotman, author of *AI First*, categorizes the shift as one from treating AI as a tool to treating it as a co-worker: Experienced workers set direction, context, and values, and AI accelerates execution within those constraints.⁵² This inverts the conventional narrative about who benefits from AI at work. A 2025 analysis in *The Conversation* argued that decades of experience in delegation, context-setting, and critical evaluation give mid-career and senior workers a meaningful advantage in the prompting and quality-judgment tasks that AI most often requires, even as younger workers outpace them on raw familiarity.⁵³ Institutional and domain knowledge of experienced workers, combined with AI iteration skills, could better position the value these workers bring through their encore careers.

Life-course learning and upskilling

The front-loaded education model is being questioned for compatibility with a 100-year life expectancy. The World Economic Forum's *Future of Jobs Report 2025* restates the same finding⁵⁴: 85% of business leaders now engage in upskilling as a workplace strategy, demonstrated by a growth from 41% of workers completing workplace training in 2023 to 50% by 2025.⁵⁵ Yet training systems lag, and

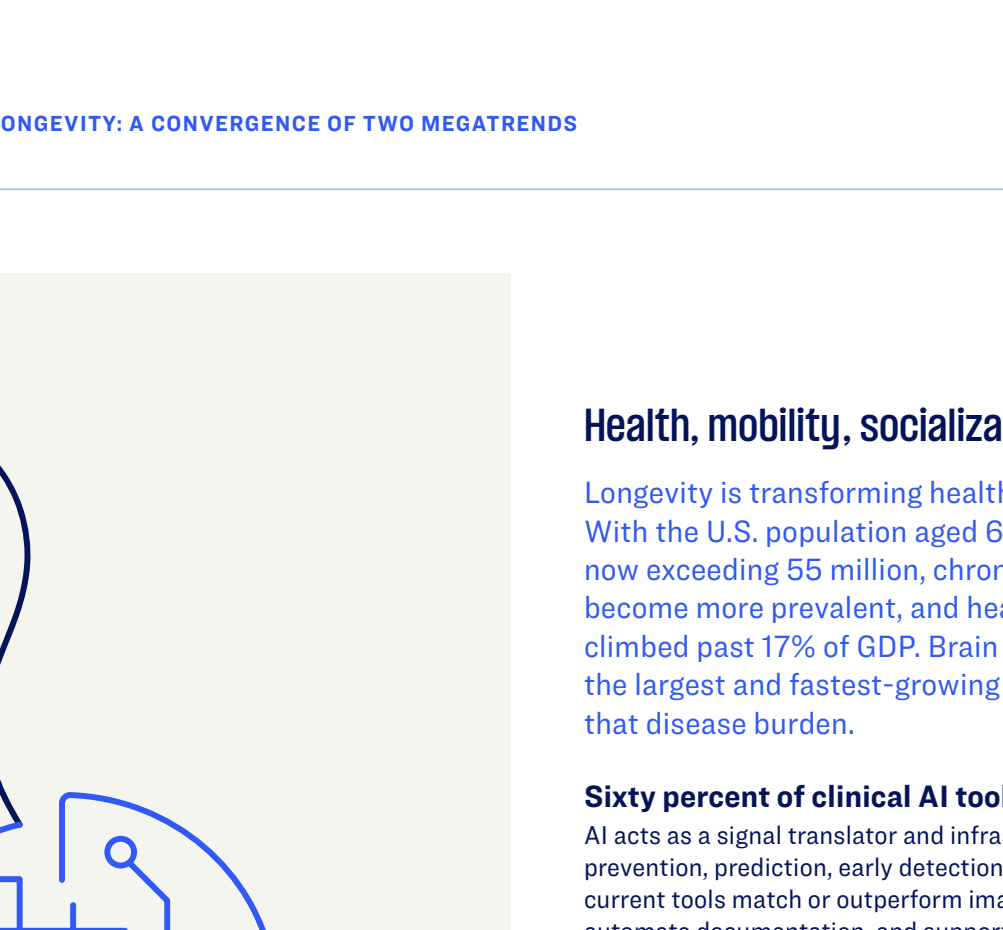
older workers consistently report that the support available to them is insufficient. Nearly half of employees prioritize AI training but report moderate or inadequate access to it.⁵⁶

AI-enabled personalized learning is the most plausible scaling mechanism, and enterprise-grade platforms have moved from pilot to production within a couple of years. IBM SkillsBuild, an AI-personalized skills platform, has reached more than 16 million learners against a public commitment to train 2 million specifically in AI by 2026.⁵⁷ IBM's Institute for Business Value finds that the share of the global workforce needing reskilling has risen from a historic 6% to 35% in a decade, driven primarily by AI adoption.⁵⁸ Adaptive AI systems can absorb that volume in a way instructor-led programs cannot. The 125 Osher Lifelong Learning Institutes⁵⁹ across the United States, serving more than 125,000 members age 50 and older, offer a ready-made distribution channel⁶⁰ to deliver this kind of AI-personalized content specifically to the older-worker segment. Universities are uniquely positioned to bridge AI and longevity through life-course curricula, continuing-education partnerships with employers, and research linking AI-enabled care with healthspan outcomes. As institutions of continued learning are surfacing, what's missing is content that connects AI literacy specifically to financial, caregiving, and health decisions across longer lives.

A caution accompanies these gains. Swatee Singh has warned about over-trust in confident-sounding systems as AI scales into education and training. The risk maps onto the established *automation bias* literature: Users grow deferential to systems that sound confident even when wrong, and the deference is most consequential when AI assists professionals who accept flawed outputs because the system appears to draw on superior data. Upskilling systems designed for longevity should be judged on skill durability and labor-market outcomes.

Universities are uniquely positioned to bridge AI and longevity.

What's missing: content that connects AI literacy to financial, caregiving, and health decisions across longer lives.

**60%**

of clinical AI projects
do not progress beyond
pilot deployment.

Health, mobility, socialization/cognition

Longevity is transforming health systems. With the U.S. population aged 65 and older now exceeding 55 million, chronic disease has become more prevalent, and health spending has climbed past 17% of GDP. Brain health is one of the largest and fastest-growing components of that disease burden.

Sixty percent of clinical AI tools

AI acts as a signal translator and infrastructure for prevention, prediction, early detection, and cure. While current tools match or outperform imaging experts, automate documentation, and support remote monitoring, according to a systematic review published in *Future Internet*, approximately 60% of clinical AI projects fail to progress beyond pilot deployment, with interoperability, workflow integration, and clinician trust identified as the dominant barriers.⁶¹

The health impact of AI has been observed primarily across six functions critical to longer lives:

- Pharmaceutical development and discovery
- Preventative screening and health monitoring
- Care delivery
- Mobility
- Cognition
- Companionship

Precision screening and imaging

AI has already reshaped longevity through major advances in precision screening and medical imaging, enabling earlier and more accurate disease detection. Precision imaging is the most mature area of AI adoption in health care: More than half of all AI medical devices approved in the United States and Europe between 2015 and 2020 have been in radiology.⁶²

NHS England's 2023 Artificial Intelligence Diagnostic Fund put £21 million into 12 imaging networks and 66 trusts to deploy AI for chest diagnostics, including lung cancer. A 2025 rapid evaluation in *eClinicalMedicine* found procurement and deployment took longer than planned, mainly due to clinicians under workload pressures who couldn't engage, uneven AI literacy of staff, and varied local governance.⁶³

Brazil shows the same pattern from a different angle. In May 2023, Hospital Israelita Albert Einstein joined Mayo Clinic Platform_Connect,⁶⁴ a federated network that lets member hospitals train and validate AI models on each other's de-identified data without the data leaving home. This is a way to get Latin American patients into the training set. Meanwhile, Dasa, Brazil's largest diagnostics group, has built an internal AI lab for radiology, part of a regional push that treats imaging AI and digital pathology as the most credible answer to persistent regional shortages of radiologists, pathologists, and oncologists.⁶⁵

Despite these barriers, AI systems now match or exceed specialist performance across tasks such as identifying pneumonia from chest X-rays, classifying skin lesions, and detecting lymph node metastases in breast cancer pathology.⁶⁶ A consequential example is IDx-DR, the first FDA-approved autonomous diagnostic system for diabetic retinopathy, which achieved 87% sensitivity and 90% specificity in its FDA pivotal trial⁶⁷ and is now reimbursed by Medicare,⁶⁸ allowing screenings to occur directly in primary care clinics rather than relying on scarce specialist appointments.

These imaging advances influence longevity by enabling early detection, which significantly alters health outcomes. In fields like diabetic retinopathy, some cancers, and atrial fibrillation, AI models identify disease signatures earlier than routine screening, giving clinicians the chance to act before a condition progresses. Faster diagnosis means fewer redundant scans and follow-ups, which boosts efficiency, saves costs, and reduces the workload for health professionals, especially in areas with staff shortages.

AI MODELS VS. ROUTINE SCREENING

Identify disease signatures earlier, giving clinicians the chance to act before a condition progresses.

Preventative screening, health monitoring, and wearables

AI's impact on longevity shifts health from episodic to continuous risk management, emphasizing prevention, which is more cost-effective than the care it replaces. Scaling AI-driven prevention is vital as health budgets face pressures from shrinking workforces and rising old-age dependency. Advances now enable massive data analysis for early issue detection. Wearables and ambient monitoring already offer short-term benefits by tracking sleep, activity, and signals, enabling early detection and encouraging healthier behavior, which supports the future of personalized medicine.

Recent Stanford research suggests fitness tracking and personal workout planning may be improved through how an AI coach engages the user. In a 2026 randomized study of Bloom, an LLM-based coaching app from Stanford HAI, participants using the LLM feature did not exercise meaningfully more than those using an otherwise-identical app without it.

However, their mindset shifted as they came to see activity as something they were capable of and worth sustaining.⁶⁹ The researchers attribute the result to a design that encouraged rather than directed, built on motivational-interviewing principles instead of performance-driven prompting. For longevity, detecting a trend through wearables matters at least as much as the conversational layer that helps an older adult translate that into capability.

Sastry Durvasula, TIAA's chief operating officer, envisions AI-powered hearing aids and glasses that provide contextual awareness, conversational engagement, and continuous mental stimulation, which could help delay cognitive decline by keeping older adults actively connected to their environments. Research on cognitive reserve supports this direction: Evidence demonstrates that cognitively demanding and novel activities reduce the risk of impairment,⁷⁰ and AI-powered devices could deliver this kind of stimulation in new ways.

Pharmaceutical development and discovery

Today's pharmaceutical pipeline is slow, risky, and expensive. AI has already demonstrated the ability to identify thousands of compound candidates in a matter of hours, indicating which ones may be most promising.⁷¹ DeepMind's AlphaFold has transformed structural biology by predicting protein structures and laying foundations for more targeted drug discovery in the coming decade, though translation into approved therapies remains in its early stages.⁷²

For aging populations, the promise is precision. AI could integrate genetic data, disease profiles, lifestyle factors, and historical treatment responses to recommend individualized regimens, particularly for older adults managing multiple chronic conditions and complex polypharmacy.⁷³

Constraints are significant. Pharmaceutical AI relies on high-quality, diverse datasets. Yet, women, older adults with multimorbidity, and underrepresented ethnic groups are undersampled, risking less-effective drugs across different groups.⁷⁴ Regulatory frameworks built for linear trials don't suit adaptive models that can make real-time modifications, and AI development faces energy and infrastructure limits that could hinder scaling without new architectures. The bias-as-infrastructure risk introduced earlier applies acutely here: Biased pharmaceutical training data does not stay isolated to a single model but propagates into every subsequent model built on the same foundation.



AI-enabled robotics and surgery

For older adults living with debilitating joint, spine, and musculoskeletal conditions, surgery has been constrained by two persistent barriers: a shrinking workforce and the physical limits of what aging bodies can withstand. AI-powered robotics and emerging regenerative medicine are beginning to address both simultaneously.

Ajit Naidu cites AI-powered surgical robotics as among the most consequential near-term advances for aging populations. A 2024 report by the Association of American Medical Colleges projected a U.S. shortage of up to 19,900 surgeons by 2036,⁷⁵ a gap that robotic systems are increasingly being designed to fill. In 2025 alone, 3.15 million surgeries⁷⁶ were performed using da Vinci platforms, an advanced robotic surgery tool for precision and hard to reach operations. The procedures most often performed robotically (knee replacements, hernia surgeries, prostatectomies⁷⁷) are also those frequently performed on patients over 60.

A meta-analysis synthesizing 25 peer-reviewed studies found that AI-assisted robotic surgeries achieved a 40% improvement in surgical precision, a 25% reduction in operative time, and a 30% decrease in intraoperative complications compared with manual techniques.⁷⁸

Care delivery

Care delivery is where AI meets the hard constraints of workforce, workflow, and infrastructure. Health systems already face aging populations, rising chronic disease, stagnant productivity, and persistent workforce shortages. Even where AI tools are deployed, clinicians and nurses often describe heavier workloads rather than liberated time.

Ambient voice technology has moved past proof of concept: An NHS pilot expanded across London hospital sites and evaluated over 17,000 patient encounters reported an average 8.2% time saving per encounter, translating to capacity for emergency departments to see 13.4% more patients and, in outpatient and GP settings, for clinicians to spend 23.5% more time on each appointment focused directly on the patient rather than on documentation.⁷⁹

In radiotherapy, a Mayo Clinic and Google Health validation study found that deep-learning auto-contouring of organs at risk for head and neck cancer treatment planning reduced overall contouring and process time by 76%, with the model producing clinically usable contours 90% of the time compared with 53% for manual contouring.⁸⁰

The next productivity gains will likely come from redesigning roles and workflows around AI rather than sprinkling tools on top of legacy processes, with nurse time, caregiver burden, and avoidable hospital days as the key outcome metrics. Jessica Barker points to escalating demand and the prospect of multiple generations needing simultaneous care.

Mobility

Mobility becomes health infrastructure in the longevity era. When older adults stop driving, a review by the AAA Foundation for Traffic Safety found declines in general health and physical, social, and cognitive function, higher rates of entry into long-term care, increased mortality, and nearly double the risk of depressive symptoms.⁸¹ This is the gap autonomous vehicles (AVs) aim to close. The MIT AgeLab's consumer research found that a majority of respondents were unwilling to purchase a self-driving vehicle, citing

trust, fear of malfunction, safety, and software reliability.⁸² Current deployment patterns reinforce the concern. Commercial robotaxi service remains concentrated in a small number of dense urban markets. Cost has also been a barrier. Comparing roughly 94,000 ride requests in the San Francisco Bay Area, analysis found that Waymo averaged \$19.69 per ride by the end of 2025—about 12.7% more than Uber (\$17.47) and 27.3% more than Lyft (\$15.47).⁸³

The more persistent gap is trust and design—a majority of older adults (64% in 2023) say technology is not built with their age group in mind, and skepticism toward AI runs high, as is demonstrated in TIAA's AI Survey. It reports that willingness to let AI help with tasks drops from 36% at 40–49 to 6% at 70–79.

Sastry Durvasula observes that trust in technology evolves rapidly, and judging tomorrow's AI by today's skepticism is likely to underestimate how quickly older adults may adapt. For longevity, the policy priority is to treat mobility as a public health input: broadening AV access for older adults through pilots that integrate AVs, microtransit, and volunteer networks; preserving hybrid digital-and-human access points; and embedding health metrics into transport planning rather than measuring success solely by ridership or revenue.

Cognition

Longer lives raise the stakes for brain health and social connection. Brain health conditions already account for around 24% of the global disease burden, and the number of adults over age 65 living with dementia has risen from 18.7 million in 1991 to 49 million in 2021.⁸⁴ The WHO estimates that 20%–34% of older adults in the United States and

Europe experience loneliness, with health effects comparable to smoking 15 cigarettes a day⁸⁵. A meta-analysis of 148 studies found that strong social relationships increase the likelihood of survival (general mortality) by 50%.⁸⁶

AI companions and cognitive tools are emerging to address these challenges. Social robots like ElliQ, designed specifically for older adults, offer conversation, games, well-being check-ins, reminders, and support for video calls.⁸⁷ A systematic review of AI tools for older adults found significant reductions in loneliness in six of nine studies,⁸⁸ with social robots showing the strongest effects. At the same time, large-scale studies of chatbot use show that people with fewer human relationships are more likely to rely on AI companions and that heavy emotional self-disclosure to chatbots is associated with lower well-being, greater loneliness, and reduced real-world socializing.⁸⁹ This creates a paradox: The people who need connection the most may also be at the greatest risk of replacing human relationships with simulation.

When the TIAA Institute's April 2026 survey asked Americans how optimistic or pessimistic they felt about AI performing different tasks, treating depression and loneliness drew the highest level of pessimism of any task tested.

Overall, 39% of respondents expressed pessimism, rising to 59% among adults ages 70 to 79. By contrast, fraud detection and prevention generated the highest level of optimism, at 56%. The contrast reflects a clear finding: AI is welcomed when it serves as a guardrail and distrusted when replaces human relationships. Any deployment of AI companions in care settings should be designed and measured against that distinction.

AI IS WELCOMED AS A GUARDRAIL AND DISTRUSTED AS A RELATIONSHIP

Net optimism vs. pessimism for selected AI tasks (TIAA Institute April 2026 Survey)

HIGHEST OPTIMISM

Detecting and preventing fraud

56% optimistic about AI in this role

The only task with majority optimism

HIGHEST PESSIMISM

Treating depression and loneliness

39% pessimistic about AI in this role



59% among adults 70–79

Vulnerability is real: Older adults with low AI literacy, limited privacy skills, or cognitive decline are more likely to misunderstand how these systems work and how their data are used.

Upendra Mardikar warns that the convergence of cognitive decline and sophisticated AI companions creates an asymmetric risk. By age 85, one in three adults experiences mild to moderate cognitive impairment, making older adults become increasingly vulnerable to manipulation through the systems they have come to trust. If a trusted AI companion that knows everything about an older adult is compromised, bad actors gain access at a scale current safeguards were not built for. They could manipulate the older adult's financial and life decisions. He describes this as an "unequal contest" that existing safeguards are not equipped to address.



"If a trusted AI companion that knows everything about an older adult is compromised, bad actors gain access at a scale that current

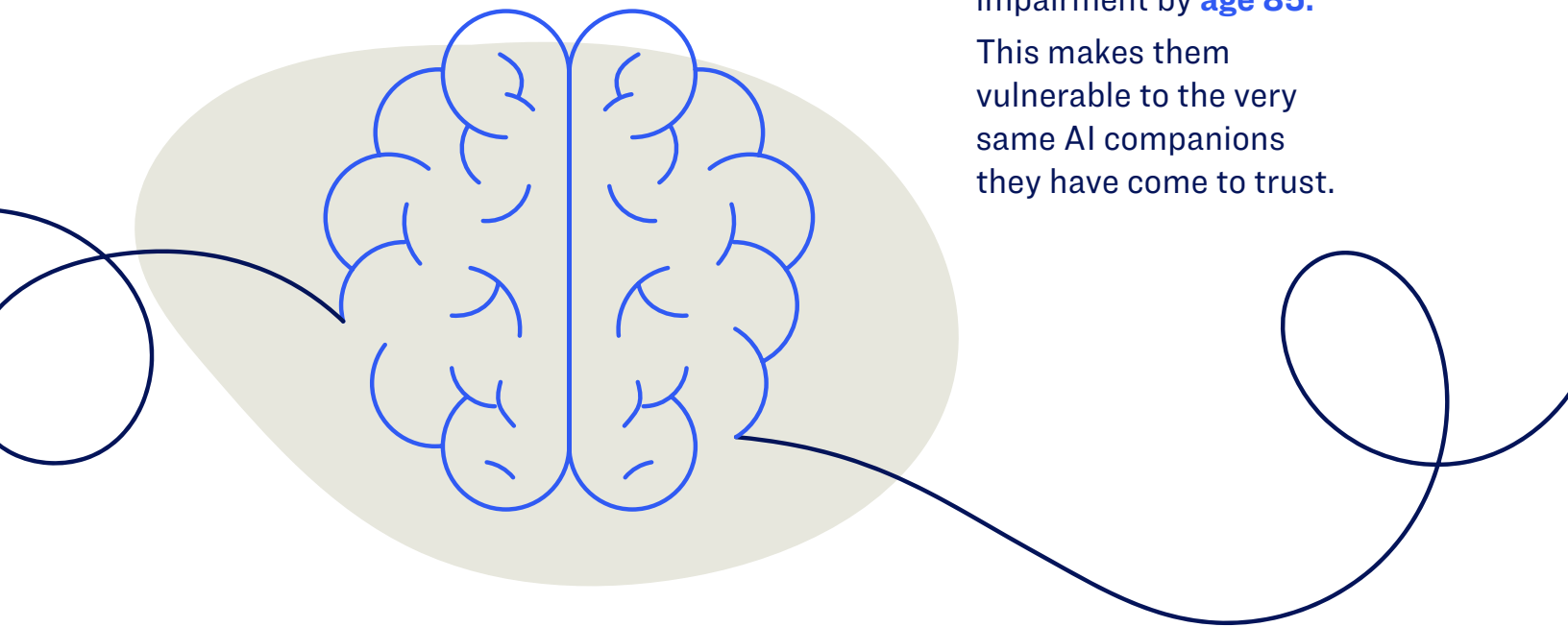
safeguards were not built for and can manipulate financial and life decisions. Current safeguards are not equipped to address this unequal contest."

Upendra Mardikar, Chief Information Security Officer, TIAA

THE UNEQUAL CONTEST

1 in 3 adults will face some level of cognitive impairment by **age 85**.

This makes them vulnerable to the very same AI companions they have come to trust.



Family, care, and companionship

The structure of care in longer lives is changing rapidly. Today, 63 million American adults provide unpaid care to relatives or friends, a 45% increase since 2015. One-third have been providing support for five years or more, and nearly one in four provide 40 or more hours a week.⁹⁰

Jessica Barker captures a common sentiment: “My assumption is my kids are not going to care for me, so I’m going to have to figure this out.”

The family-and-care impact of AI on longevity shows up across three functions: accessibility and aging in the home, digital literacy as a prerequisite for everything else, and caregiving itself, the highest-stakes application. All three are already underway.

Accessibility and aging in the home

As the population ages, more households consist of a single generation—retirees or people nearing the end of their careers—living on their own. AARP’s 2024 Home and Community Preferences Survey found that 8 in 10 adults over 50 want to age in place.⁹¹ AARP’s 2026 Tech Trends survey documents the supporting infrastructure: 91% of adults 50+ own a smartphone, 63% have a smart home device, 33% have a voice-activated home assistant, and 38% own a wearable.⁹² A basic safety-and-communication setup using voice assistants, smart lighting, and a medical alert system can be assembled for under \$450 in upfront hardware costs, with ongoing costs for broadband, monitoring subscriptions, and replacements adding several hundred dollars a year. Even over several years, that compares favorably with the \$6,200 national median monthly cost of assisted living reported in CareScout’s 2025 Cost of Care Survey.⁹³ The two aren’t substitutes: Home-based AI can extend how long someone lives independently, but it doesn’t replace facility-based care for those who need it.

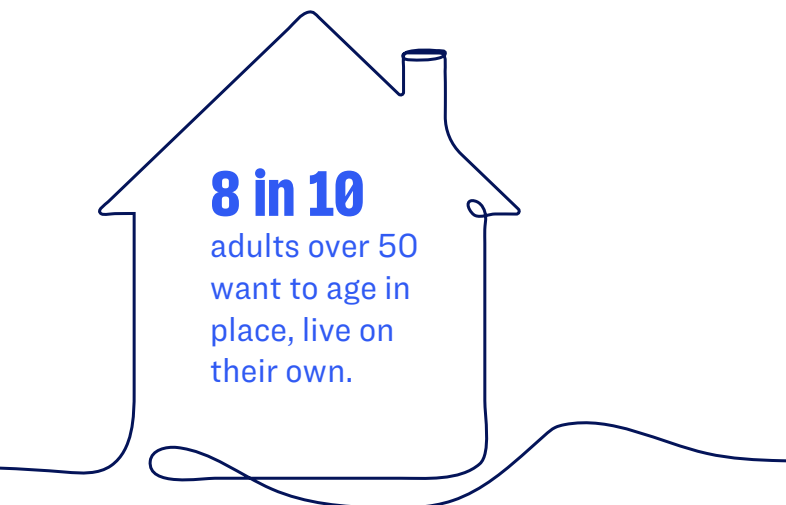
Age-related macular degeneration affects roughly 20 million Americans and is the leading cause of vision loss in adults 50 and older.⁹⁴ The Be My AI service, powered by GPT-4 VLM and integrated into the Be My Eyes app, lets users point a phone camera at an object and get an instant spoken description.⁹⁵ For an older adult living alone with deteriorating sight, tasks such as reading medication labels correctly, reviewing financial documents, and navigating the grocery store move from “requires assistance” to “requires a phone.”

On the safety side, AI-enabled fall detection has moved beyond wearables to ambient radar sensors that detect falls without cameras and flag gait changes weeks before a fall occurs.^{96, 97}

Digital literacy

Digital literacy isn’t really an attribute of older adults themselves. It’s a property of the systems being deployed. The same older adult can be “literate” or “illiterate” depending on whether the interface, onboarding, and support model were designed with them in mind. Where they aren’t, AI becomes risky. Pew Research Center found that by mid-2025, only 10% of adults over age 65 had used ChatGPT, compared with 58% of adults under 30 and 25% of those aged 50 to 64.⁹⁸ Yet, older adults are not unwilling. A 2025 study of adults over 50 found they rated AI literacy as important and were strongly motivated to learn, citing a desire to harness the benefits and avoid the dangers of AI.⁹⁹ The dominant barriers they reported were not interest but difficulties with understanding, not knowing where to start, and a strong preference for hands-on learning formats.

The TIAA Institute’s April 2026 survey reinforces the case for treating literacy as foundational. Only 33% of Americans describe themselves as “very comfortable” with technology overall, and that figure drops to 21% among adults age 70 and older. The share who reports no use of any AI financial tool



is 44% across the full sample but rises to 77% among those age 70 and older. Voluntary AI adoption depends heavily on how comfortable people already are with technology. That comfort level set a hard ceiling that any longevity-focused deployment must build a ramp around.

This creates an “unequal contest.” An older adult whose digital literacy gap leaves them most reliant on a trusted AI is also the one most exposed if that AI gets compromised or turned against them.¹⁰⁰ Digital literacy in a longevity context is therefore not only about using AI productively—it’s also about recognizing when AI is being used on you. Curricula that teach older adults how to use AI systems and tools but not how to spot a voice-cloned grandchild are preparing them for the wrong half of the threat landscape.

ANOTHER UNEQUAL CONTEST

The AI digital literacy gap leaves older adults more exposed.

AI in caregiving

Caregiving is the domain where demographic pressure, family willingness, and technological feasibility converge most tightly, and it’s the domain where AI is most visibly moving from augmenting existing roles to substitution. Barker has identified three layers: basic coordination (pill reminders, fall detection, appointment scheduling), intermediate emotional support (conversational AI and animatronic companions), and physical assistance (humanoid robots). All three are now operational at different stages of maturity.

The gender burden of caregiving

Globally, women perform 76% of all unpaid care work—more than three times as much as men.¹⁰¹ In 2023, 708 million women sat outside the global labor force because of these responsibilities, compared with 40 million men.¹⁰² On the current trajectory, the gap will still leave women spending 2.3 more hours per day on care than men in 2050.¹⁰³ AI tools that reduce the operational load of caregiving redistribute hours from a population that’s already paying for them in wages, retirement security, and labor-force participation. This presents a disproportionate benefit to women that should be designed for explicitly, as it is the user population that these solutions will most often encounter.

The intermediate layer has moved fastest, and it’s where assistance and surveillance most clearly overlap. In South Korea, the Hyodol companion doll, a GPT-powered cloth

doll modeled on a young grandchild, has been distributed to more than 12,000 older adults living alone through government welfare programs. It prompts medication and meals, while sensors alert social workers after 24 hours of inactivity.¹⁰⁴ A widely cited case in which the doll relayed a suicidal statement to a responder is balanced by unresolved questions about consent, infantilization, and what 2024 FDA registration¹⁰⁵ (not clearance) signals for the doll’s planned U.S. launch.¹⁰⁶

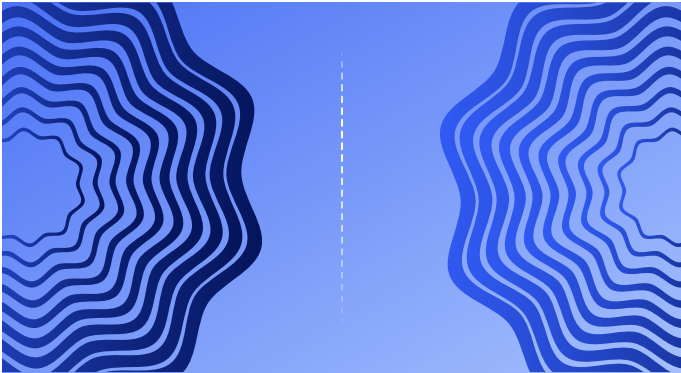
Japan’s AIREC project at Waseda University, developed under the government’s Moonshot program, has built a humanoid robot that can roll a bedridden patient to prevent bedsores, help a person sit up, and perform basic care tasks, with commercial deployment projected for 2030. Project lead Shigeki Sugano frames the work as a demographic necessity: “Given our highly advanced aging society and declining births, we’ll need robots’ support for medical and elderly care, and in our daily lives.”¹⁰⁷

The foundational layer of coordination and operational support is where AI is likely to deliver the greatest near-term value. Jessica Barker describes discovering, when her father was hospitalized, that he had quietly lost track of multiple credit cards, loans, and bill payments. Untangling it all became a full-time job.¹⁰⁸ Unfortunately, this scenario is common: 41% of caregivers now track health records digitally, 39% manage finances online, and 25% use remote monitoring. Yet, 75% have never discussed their financial caregiving role with the care recipient, and 52% don’t know what they’ve spent.¹⁰⁹ Agentic AI that automates bill payment, policy renewal, medication refills, and appointment coordination can turn a stream of small, easily missed failures into a system that flags exceptions for human review.¹¹⁰

The technology doesn’t eliminate the substitution risk. In some deployments, it actually amplifies it. James Wright’s multi-year ethnography of eldercare automation in Japan (*Robots Won’t Save Japan*, 2023) followed a nursing home’s trial of three different care robots: Pepper, Paro, and the Hug lifting device. It found that instead of saving labor, the robots created new work for caregivers, who had to set up, maintain, monitor, and store the machines.¹¹¹ The nature of caregiving changed. Workers who had previously used a transfer interaction to build a relationship and have a conversation had to shorten the interaction to wheel the robot back. Residents who had previously been engaged in worker-led activities now played with Paro while workers monitored from a distance. The lesson isn’t that the technology fails, but that it reshapes the work around it, sometimes in ways that alter the relational core of care.

Crosscutting challenges and risks

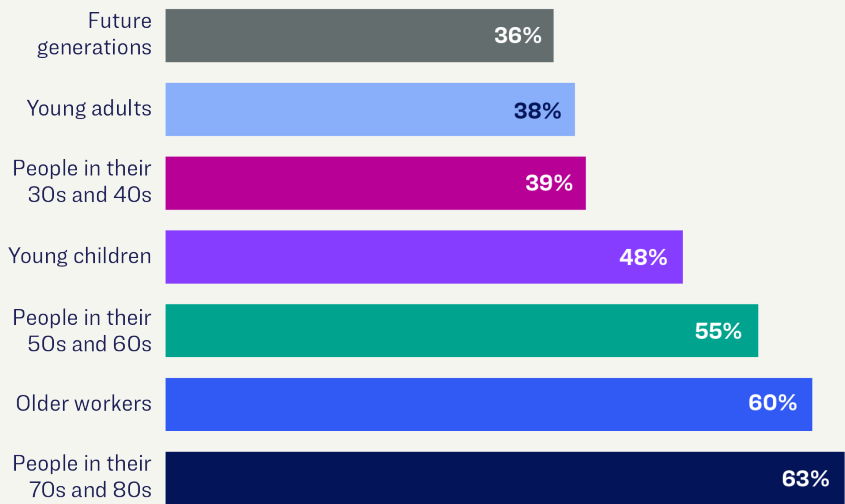
Virtually none of the AI-for-longevity benefits explored in this report can be realized without the buy-in of those who will build, govern, and use these systems. The chapters above surface a recurring counter-current: negative sentiment toward AI across generations (driven by energy costs, fear of employment shifts, distrust of corporate intentions, and skepticism about capabilities) that constrains the social permission needed to deploy these systems responsibly.



The TIAA Institute’s April 2026 survey crystallizes the readiness gap. Asked how well the United States is preparing different age groups for AI’s impact, respondents give the harshest verdicts to the oldest Americans. For people in their 70s and 80s, 63% say they are not being well prepared; for older workers, 60% say the same. By contrast, only 51% rate preparedness for future generations as “very well” or “somewhat well.”

AMERICA IS SEEN AS LEAST PREPARED FOR AI’S IMPACT ON ITS OLDEST CITIZENS

% saying the country is preparing each group “not too well” or “not well at all” for AI’s impact



A CLEAR PATTERN

The older the group, the worse Americans rate the country’s readiness to prepare them for AI’s impact—peaking at 63% for those in their 70s and 80s.

Source: TIAA Institute April 2026 survey of 1,320 nationally representative U.S. adults.

Five crosscutting risks emerge across the chapters, and each demands a crosscutting response.**1****Lack of trust across generations.**

The pattern across the survey is consistent: The people with the most to gain from AI in longevity have the least familiarity with it. Among adults 70 and older, only 5% feel they have “a great deal” of control over how AI is used in their lives, only 10% have used ChatGPT, and 77% report no use of any AI financial tool. (Usage could increase rapidly in the near future as awareness and comfort levels build.) At the same time, 80% of Americans aged 80 and older support federal standards governing AI use by government and private companies, the highest level of support among all age groups. The implication is that their relationship with AI is shaped by absence and by a sense of powerlessness, both of which feed skepticism.

CLOSING THIS GAP IS A PRECONDITION FOR THE FOUR RISKS THAT FOLLOW.**2****Implementation without governance.**

RAND’s 2024 review¹¹² of the root causes of failure for AI projects found that more than 80% of AI initiatives fail, with leading causes including misaligned organizational understanding of the problem, insufficient infrastructure, and deploying technology in search of a use case rather than the other way around. Within longevity-relevant domains, that failure rate is likely higher. Governance, in this context, is the precondition for AI to do useful work in health care, financial advice, hiring, and care delivery for an aging population.

3**Fraud and IT security.**

The same generative-AI capabilities that automate personalized advice at scale can automate personalized fraud just as easily. Machine learning algorithms profile likely victims by age, online behavior, and demographic markers and target them with grammatically correct, contextually plausible messages. Defending against this requires verifiable identity infrastructure, household-level digital literacy that includes the ability to spot manipulation, and a regulatory floor that prevents bad actors from outpacing bank fraud teams.

4**Reliability of AI systems.**

AI is becoming infrastructure, and infrastructure that fails predictably is preferable to infrastructure that fails surprisingly. Multiple multi-hour outages at major AI providers in 2024 and 2025, several of which were traceable to the handful of cloud and inference platforms underpinning the field, show how concentrated AI delivery has become. A single failure cascades across many downstream services. For an older adult who relies on a voice assistant for medication reminders, a fall-detection service for safety, or a conversational AI for daily companionship, an outage is a gap in the safety net. Reliability standards for consumer AI used in caregiving, mobility, and health monitoring should be designed around the assumption that the technology will fail and that human and analog fallback paths must remain functional.

5**Workforce displacement at the wrong end of the career.**

The Productivity chapter showed how AI can extend working lives and enable encore careers. However, the same tools, deployed differently, can compress them. Workers in their late 50s and 60s are disproportionately concentrated in roles (administrative, customer service, paralegal, analytical) that are most exposed to near-term automation and least likely to be targets of employer-funded reskilling. The risk isn’t that older workers cannot adapt; it’s that the labor-market transition is being designed without them in mind, leaving the cohort with the longest remaining working life pushed out of work earliest.

Quantum shifts ahead

Many industry leaders forecast the arrival of artificial general intelligence (AGI), which can understand, learn, and perform any intellectual task a human can, across domains, without being narrowly trained for each one.

However, there may not be enough computing power in the world to bring about this type of intelligence in the near term. Hyperscaler data infrastructure buildout has already cost hundreds of billions and resulted in supply crunches for storage, memory, energy, and graphics chips. The Stargate Project, announced in January 2025 by OpenAI, Oracle, SoftBank, and MGX, committed up to \$500 billion over four years to U.S. AI infrastructure—a scale of capital deployment that itself signals how thin the margin between current capacity and frontier-model demand has become.¹¹³ High token prices mean that strict scrutiny now applies to AI usage, and aggressive returns on investment are expected. Illustrating this point, OpenAI has repeatedly throttled access to its most compute-intensive products, including shuttering Sora video generation, to preserve capacity for paying enterprise and developer workloads.¹¹⁴

If AGI isn't feasible in the near term, agentic systems and task-oriented models may win out by demonstrating ROI. Token use could be reduced through automatic model scaling and narrow skills libraries. Some organizations with niche use cases are already finding it more cost-efficient to run local models on shared infrastructure. Smaller open-weight models, such as Llama, Mistral, Phi, and Qwen, combined with retrieval-augmented generation are increasingly competitive with frontier general-purpose models on bounded tasks, at a fraction of the cost.

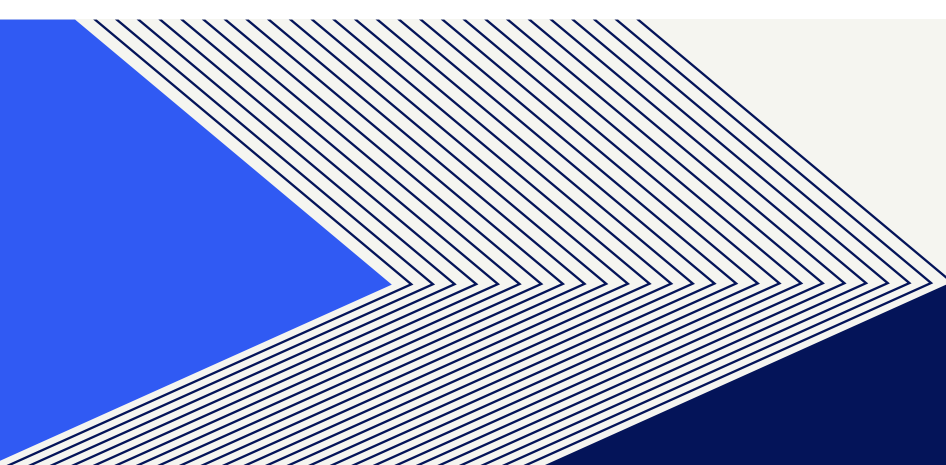
For aging populations, specialized agents are the likely trajectory. Highly regulated medical procedures already require unique systems that must clear high bars of accuracy: As of early 2026, the U.S. Food and Drug Administration's authorized list included more than 1,000 AI- and machine-learning-enabled medical devices, the great majority of them narrow tools for specific imaging, diagnostic, and monitoring

tasks. In financial services, retirement planning, and caregiving, the same logic applies. A specialized agent that does one thing exceptionally well is more easily audited and governed than a generalist model.

The near-term future of longevity-relevant AI is more likely a network of specialized agents coordinated by a thinner orchestration layer than a single all-knowing companion.

Governance and ethics will continue to dominate public and industry conversations. LLM reasoning has often been described as a “black box” that researchers cannot easily see into. Anthropic CEO Dario Amodei has described the lack of mechanistic interpretability as a basic safety problem, arguing in a widely read April 2025 essay, “The Urgency of Interpretability,” that society is in a race between making AI capabilities legible and continuing to deploy systems whose internal reasoning remains opaque.¹¹⁵ Without continued investment in human oversight, regulatory constraints, and ethical guidance, mechanically unintelligible models could become increasingly unpredictable.

Leading AI ethicists, civil-society researchers, and standards bodies have begun to converge on a set of practical guardrails: the U.S. National Institute of Standards and Technology's AI Risk Management Framework, released in January 2023 and now widely adopted across regulated industries;¹¹⁶ the European Union's Artificial Intelligence Act, which entered into force in August 2024 and is phasing in obligations for general-purpose and high-risk AI systems through 2027;¹¹⁷ and the OECD AI Principles, which 47 jurisdictions have endorsed as a baseline for trustworthy AI.¹¹⁸ Together, they begin to translate the demand for “responsible AI” into operating standards that organizations serving older adults can adopt and that policymakers can enforce.



For aging populations,
specialized agents
that do one thing
exceptionally well are
the likely path forward.



The human element

Across this report, one pattern recurs: AI succeeds in longevity where it strengthens human relationships, judgment, and oversight. It fails where it displaces them. This chapter turns that pattern into three design principles for institutions deploying AI for older adults.

Relational design. AI deployments that subtract from the time and texture of relationships will lose the trust they depend on. The Japanese care robot discussed in the Family chapter is the clearest version of this lesson: Introducing a robot to automate a transfer often shortens the conversation that once accompanied it. The design implication is that older adults and caregivers should sit at the center of system design, not at the receiving end. Success metrics should track relational time preserved, not units shipped or hours notionally saved.

Design to support human judgment. AI systems can be tuned to deliver agreeable answers, a property the field calls sycophancy, in which the model echoes the user's framing rather than challenging it.

Over time, this erodes the productive friction that develops independent judgment. For an older adult who has spent two decades deferring to a confidently incorrect AI advisor, recognizing the moment the system is wrong or compromised becomes harder, not easier. The countermeasure is deliberate preserving human judgment in the loop, including, importantly, the user's own.

Governance by design. As AI becomes more autonomous, oversight must shift with it. Static human-in-the-loop models, appropriate for a 35-year-old user with full cognitive function and digital fluency, may be wrong by default for an 85-year-old user with mild cognitive impairment and limited digital literacy. Adaptive governance, in which the level of oversight scales with user characteristics, decision stakes, and demonstrated AI reliability, is the next iteration of current frameworks. The institutional conditions that make this hard, including concentrated AI infrastructure, weak audit trails, and uneven literacy, are treated in the Crosscutting chapter.

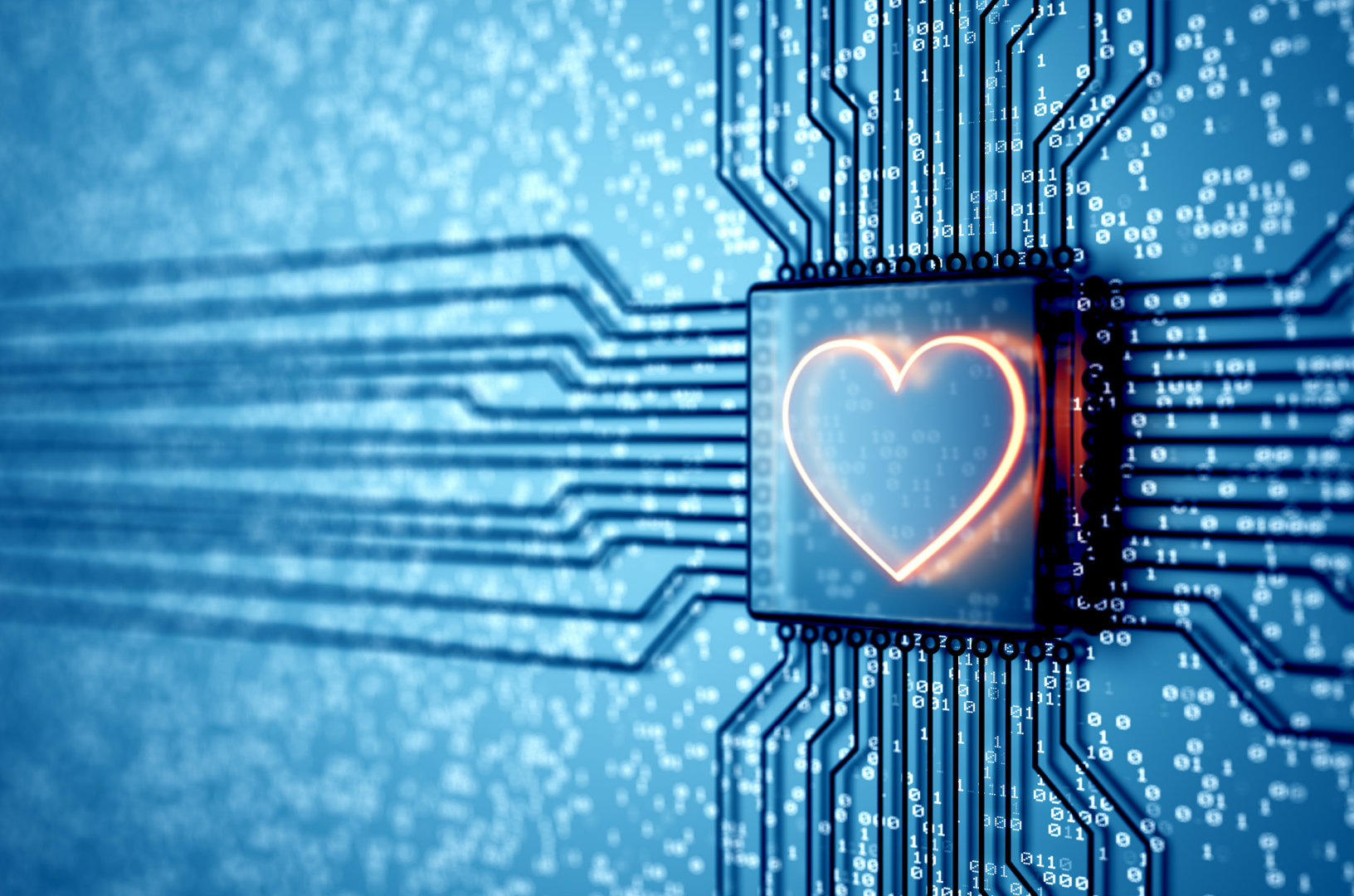
These three principles—relational design, judgment design, and governance by design—are not abstract commitments. They are the through-line of the recommendations that follow, which translate each into specific moves for industry, policymakers, and society.

Recommendations for industry, policymakers, and society

The following recommendations are not an exhaustive policy agenda. They are the small set of moves that, in light of the evidence presented in this report, would most directly close the gap between what AI can do for longer lives and what it currently does.

RECOMMENDATIONS AT A GLANCE

Audience	Recommendation
INDUSTRY	
Financial institutions	Build fiduciary-grade AI guidance for older users from the start, not as an accessibility retrofit. Treat fraud infrastructure as longevity-era safety equipment; meet a data-governance standard the public can trust.
Health care and care providers	Move clinical AI tools out of pilots and into workflows, infrastructure, and reimbursement. Couple every consumer-facing AI product aimed at older adults with a corresponding literacy resource so adoption isn't gated by digital fluency.
Technology builders	Invest in red-teaming (deliberately attacking systems to identify vulnerabilities) and interpretability for AI products used in caregiving, financial advice, and health monitoring; the survey shows that adding human oversight only partially closes the trust gap, which means the underlying systems must themselves be made more trustworthy. Treat reliability as a longevity-safety standard; design for graceful degradation when the model is unavailable and analog fallback when the network is down.
POLICYMAKERS	
Policymakers and regulators	Require bias audits for consequential AI systems (hiring, lending, insurance, health care triage) with disclosure to affected individuals, including age-segmented audits where the affected population skews older. Sharpen regulatory focus on security and elder-fraud concerns industry itself flags as urgent. Treat mobility, broadband, and digital literacy as public-health inputs for an aging society and support the digital infrastructure that AI-supported aging in place will depend on. Invest in literacy programs at the scale of the gap they need to close.
SOCIETY	
Community and civil-society infrastructure	AI's longevity outcomes will be shaped by the community-level infrastructure that brings new technologies into older adults' daily lives. Build channels through which AI literacy, scam recognition, and adoption support actually reach the populations the report has identified as most exposed. Sustaining and scaling them is the precondition the recommendations above assume but don't, by themselves, create.



Conclusion

A call to lead the future of aging

AI and human longevity are converging faster than the institutions meant to govern them can keep up. That gap shouldn't cause alarm. It should create urgency.

The evidence here is clear. AI is already reshaping how older adults manage money, navigate health systems, stay connected, and find meaning in work. The tools exist, and the need is real. What's missing is the will to deploy them equitably, govern them responsibly, and design them for the people who stand to benefit most.

Older adults aren't passive recipients of this transformation. They're its highest-stakes participants. They bring decades of judgment, experience, and perspective that no AI can replicate. The goal isn't to hand them over to technology. It's to give them tools that extend their independence, protect their security, and honor their dignity.

The survey data in this report doesn't show a population afraid of the future. It shows a population that hasn't been prepared for it. That's a solvable problem, and financial institutions, health care systems, policymakers, and technology builders each hold a piece of the solution. No one can deliver it alone.

Longer lives don't automatically mean better ones. But they can. The decisions made in the next five years will determine which future arrives. This report is a call to make those decisions deliberately, equitably, and with the oldest among us at the center.

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The Global Coalition on Aging aims to reshape how global leaders approach and prepare for the 21st century's profound shift in population aging. GCOA uniquely brings together global corporations across industry sectors with common strategic interests in aging populations, a comprehensive and systemic understanding of aging, and an optimistic view of its impact. Through research, public policy analysis, advocacy, and strategic communications, GCOA is advancing innovative solutions and working to ensure global aging is a path for fiscally sustainable economic growth, social value creation and wealth enhancement.

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i Based on data in PLANSPONSOR's 2025 DC Recordkeeping Survey published June 25, 2025.

ii As of December 31, 2025, TIAA paid out \$6.17 billion in total annuity income. This figure represents all annuity income, including guaranteed and additional amounts, for all of TIAA's annuity products.

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