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Redefining the Optimal Retirement Income Strategy

David M. Blanchett, PhD, CFA, CFP®, Head of Retirement Research, PGIM DC Solutions

Editor's note: This article is an adaptation of the live webinar delivered by David Blanchett in 2023. His comments have been edited for clarity and length.

You can read the summary article here as part of the January 2024 Retirement InSight and Trends Newsletter, worth 1.0 CE when read in its entirety (after passing the online quiz.)

You may also choose to take the full length course Redefining the Optimal Retirement Income Strategy for 1.0 hour continuing education (CE) credit.

By David M. Blanchett, PhD, CFA, CFP®, Head of Retirement Research, PGIM DC Solutions

Today's topic is one of the things that I have been researching for over a decade. My goal is to help you think more deeply about how you provide advice and guidance to your clients using financial planning tools.

You are doing a Monte Carlo simulation for a client when you create a financial plan using eMoney, MoneyGuidePro, or any of the leading financial planning software tools. It is not that I dislike Monte Carlo. I love Monte Carlo. It was a fantastic evolution in our industry. The tools we are using and the methodologies for Monte Carlo have not evolved much over the last 30 years since some of the earliest research on things like safe withdrawal rates.

I will walk through some models that could be used in financial planning tools to provide better advice and guidance on anything that you are modeling in a financial plan. I know they work because I have built tools that use them. The good and bad news here is that I do not have anything to sell you.

I don't expect you to go out and change how you do things tomorrow. Still, by following a framework, we can improve how we give people advice and guidance when it comes to every financial decision that is part of a financial plan. If you want to get more into some of the math behind this presentation, I have an open-access paper you can find online.

There are decades of research backing up this. When I was trying to get this paper published, the reviewers commented that what I covered was not especially novel, but I tied together different models to solve this problem comprehensively. For those of you who know about the research out there, you will see many similarities, but the goal here was a comprehensive framework that gives individuals who want to build tools the chance to figure out how to do so effectively.

Where We Are Today

How many planners use Monte Carlo projections for their clients? It's about 80% or more.

People define Monte Carlo differently. When I think about Monte Carlo, it is just acknowledging the uncertainty in any projection. You could do two or three runs. You could do 100,000 runs. Whatever it is, that is fine. The key is that we do not know the future, so how can we model it?

Monte Carlo can do anything. The existing limitations will be in the tools that we are using that deploy some kind of stochastic process. Our tools take shortcuts, and the most common shortcut today is this idea of static decision-making.

Assume someone is going to spend $50,000 a year when they retire. They will increase that amount every year by inflation, and that is it. There is no notion of adjusting the spending level or the withdrawal amount based on how things change over time. If you apply things like guardrails, that would be a dynamic model. There are more tools today that are offering some guardrail perspective on retiree spending. Why dynamic withdrawals are so important is not because we can forecast exactly how someone will change in the future based upon the markets; it is because they affect what I would do today.

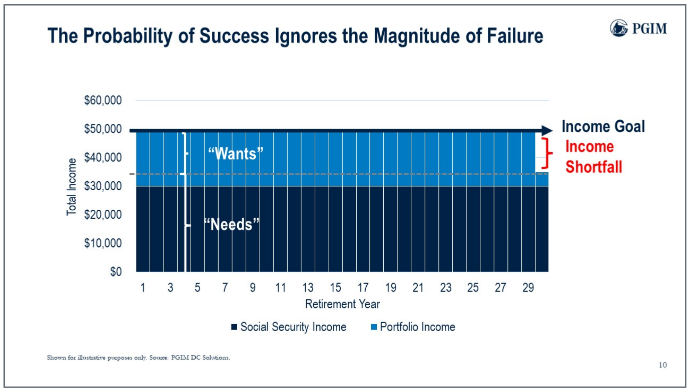
If I acknowledge that as situations change, I will change, it can significantly affect what I should do right now. An example here would be, should I buy an annuity? If you assume you can only buy the annuity today, the annuity could look incredibly valuable. If you allow for the possibility of buying the annuity at future points in time, you might not have to buy it today. If you acknowledge the possibility of cutting back on spending in the future, it might allow you to spend more money today.

Today's tools do not allow for this. Most tools today assume that you retire, start the car, throw on blinders, and go down the road. They do not allow you to course-correct, make changes, speed up, or slow down. You follow this same path, and either you succeed or you fail.

The Most Common Metric Today is Success Rates

The overwhelmingly most common metric today for quantifying how people are doing for retirement is success rates. A success rate is pretty simple. You do a Monte Carlo projection. Within each run or trial, you ask, did I accomplish my entire goal? If I accomplished my goal in 800 of 1,000 runs in its entirety, I would have an 80% success rate.

The obvious problem with metrics like these is that they need to pay more attention to the magnitude of failure. Here is an example of a retiree with a need for $50,000 a year of income, and in the 30th year of retirement, they fall just a tiny bit short.



The Probability of Success Ignores the Magnitude of Failure

Shown for illustrative purposes only. Source: PGIM DC Solutions.

Did this person succeed or fail? They succeeded. Yes, they had this little, tiny blip at the end, but they got all the way there. There is no notion of getting "almost all the way" when you use success rates.

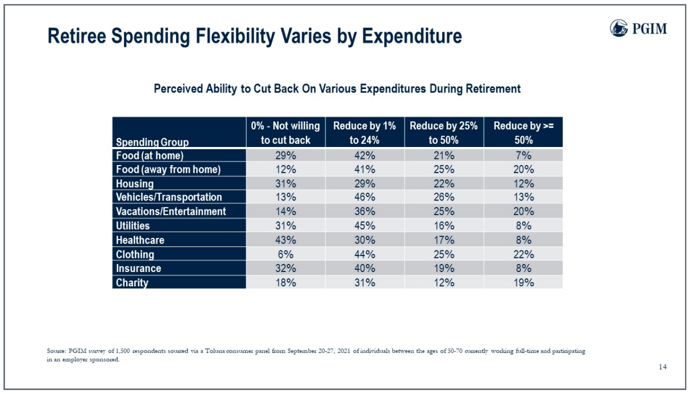
Retiree Spending Flexibility Varies

The four percent rule is the initial withdrawal rate.

What concerns me about it and a lot of the research that has followed is that it uses similar assumptions to what people commonly use in financial plans today. We will call it 30 years old. We should have better models than retirement, which lasts a fixed period, and the income goal increases yearly by inflation, regardless of what else is going on, and outcomes are determined using success rates. This is what Bill Bengen used 30 years ago, and I am going to guess most of you are still using it today to think about retirement outcomes.

This is problematic because it ignores the idea of a "soft liability." Many of the frameworks we use in the retirement income planning space come from pension plans that use liability-driven investing to plan the payments they are obligated to make. The pension plan does not have a choice. They have a hard liability. They owe some number of beneficiaries and participants millions of dollars a month every month. Remember, they do not have a choice. The thing about people, though, is that people have a choice. They have the capacity to cut back on spending.

How much are retirees willing to cut back on different types of expenditures? You can see the list of expenditures below. Fun fact: these are the primary baskets used to calculate the Consumer Price Index.



Retiree Spending Flexibility Varies by Expenditure

Perceived Ability to Cut Back On Various Expenditures During Retirement

Spending Group	0% - Not willing to cut back	Reduce by 1% to 24%	Reduce by 25% to 50%	Reduce by >= 50%
Food (at home)	29%	42%	21%	7%
Food (away from home)	12%	41%	25%	20%
Housing	31%	29%	22%	12%
Vehicles/Transportation	13%	46%	26%	13%
Vacations/Entertainment	14%	36%	25%	20%
Utilities	31%	45%	16%	8%
Healthcare	43%	30%	17%	8%
Clothing	6%	44%	25%	22%
Insurance	32%	40%	19%	8%
Charity	18%	31%	12%	19%

Source: PGIM survey of 1,500 respondents sourced via a Toluna consumer panel from September 20-27, 2021 of individuals between the ages of 50-70 currently working full-time and participating in an employer sponsored.

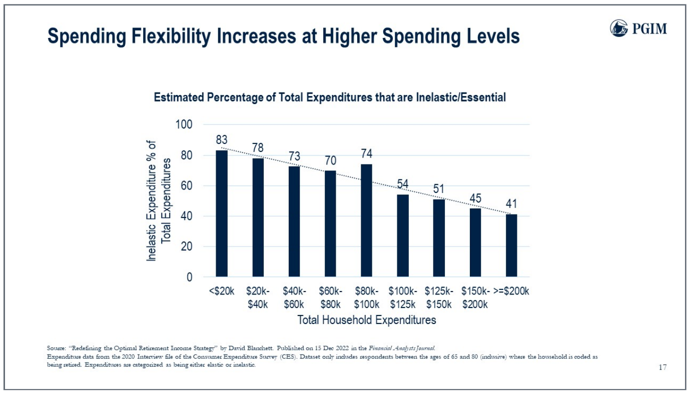
If you think about success rates and static modeling, the assumption is that every single person – 100% of respondents – would not be willing to cut back at all on any expenditure. However, that's not the case. There are certain types of expenditures like healthcare that people are less willing to cut back on. But even then, 57% of respondents are willing to reduce healthcare costs. They might not love it, but they are willing to do so, right? Look at things like food away from home. Only 12% of respondents are unwilling to cut back on food away from home.

Why this is so important? It is all about tradeoffs. Most retirees are not spectacularly overfunded. They want to use their money. "I would love to go on this vacation or this cruise or go to Italy when I am 67. Can I afford to do it?" Well, you must ask them in a plan whether the tradeoff is worth doing so. What does it mean for your income tomorrow if you take that today? The key here is not assuming the income tomorrow is zero because it will not be zero.

Where could things go if you model the reasonable approaches someone could take to changing their spending versus just if even a penny short after the 30th year is a failure? You can ask this in different ways. Here is a great way to ask: “So, what is the impact of a 20% drop on your retirement lifestyle?” In reality, people can afford to make this work.

Flexibility in spending allows for someone to think about those kinds of tradeoffs. How would I respond to a possible drop? Am I okay with it? Today’s retirement planning software does not generally allow for modeling this. They assume you would follow the same path, and you have failed if you fall just short.

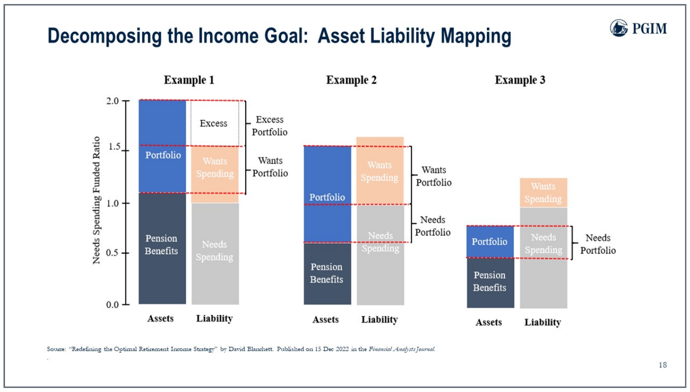
This notion of flexibility, though, is essential for your clients, given the composition of their retirement liability. Below is the percentage of spending that would be defined as essential or non-discretionary or needs by household spending level.


Spending Flexibility Increases at Higher Spending Levels

Source: “Redefining the Optimal Retirement Income Strategy” by David Blanchett. Published on 15 Dec 2022 in the *Financial Analysts Journal*.
Expenditure data from the 2020 Interview file of the Consumer Expenditure Survey (CES). Dataset only includes respondents between the ages of 65 and 80 (inclusive) where the household is coded as being retired. Expenditures are categorized as being either elastic or inelastic.

This is incredibly intuitive. The more that a household spends, the more they tend to spend on items that are more flexible or discretionary in nature. Your clients will have more income in general and could cut back on discretionary spending if needed.

Should this ability to cut back on spending when needed change how you allocate their portfolio? This is an example of thinking about mapping household assets. I am using the word “assets” here holistically.


Decomposing the Income Goal: Asset Liability Mapping

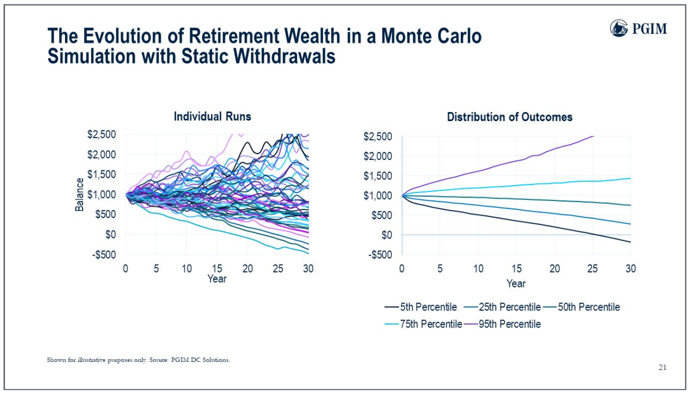
Source: “Redefining the Optimal Retirement Income Strategy” by David Blanchett. Published on 15 Dec 2022 in the *Financial Analysts Journal*.

Think about the net present value of Social Security or just the income you derive from it and the portfolio; map that against what it is actually funding. A lot of you might use buckets or time segmentation. That is one example here. Another way to think about buckets would be segmenting not only assets based on time but also the type of spending that will be funded with it.

A portfolio that will fund needs or essential expenditures should be invested differently than one that is more flexible because the roles of portfolios are very different, right? I have done much research on this. One is when you allow for spending flexibility in retirement, you can get a very different perspective on what the correct allocation to risky assets is. What you see is that the more flexible the spending goal is, the higher you can allocate your risky assets, as allocating more to stocks will, on average, create better outcomes if we assume that stocks, again, outperform bonds on average.

A More Realistic Retirement Spending Model

Now, let us talk about how we start to model retirement income. The slide below shows an example of individual runs from a Monte Carlo projection that assumes static withdrawal. So, the four percent rule. I take out a number; I increase it by inflation. I do so for 30 years. Okay.



The Evolution of Retirement Wealth in a Monte Carlo Simulation with Static Withdrawals

Shown for illustrative purposes only. Source: PGIM DC Solutions.

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The individual runs are a single Monte Carlo projection. What happens, though, is that it massively diverges over time because it does not assume that you course-correct at all. Some are headed towards failure after the market drops 20% or 30% because they still spend $40,000 a year. That is not realistic. There are some scenarios where you still spend $40,000 yearly, but we have a 10-year bull market.

It is unrealistic because it does not attract the decisions that most people would make when confronted with these market outcomes. It leads to a situation where you will have more wealth on average in death in today's dollars than you did when you first retired. If you look at the distribution of outcomes for the four percent rule, especially now using higher capital market assumptions, it could be more efficient. If you aim to maximize your lifetime income from a portfolio, you will not follow a static strategy.

You would dynamically adjust that spending amount yearly based on how things evolve. How is your portfolio doing? How is your life expectancy changing? Given those variables, you would make significant adjustments over time. The key here is changing the definition of failure. I have seen some research about how two percent is the new four percent regarding safe withdrawal rates because it uses age 105 as the retirement end age, targeting a 99% success rate. What is the point of that?

Suppose you run a Monte Carlo projection and include incredibly conservative assumptions. In that case, you are effectively saying there is an incredibly low chance you would ever have to make a change, so you cannot spend anything today. You will spend half of what you could under more realistic assumptions. That is not an accurate reflection of the tradeoffs people want to make. This is a risk that no one talks about: the risk that you spend too little right now and you have too much leftover when you are 85 or 90 years old. It is a different kind of risk, where you do not get to enjoy what you saved for. The advisors say, no, no, no, you cannot take that cruise because you must have a 99% success rate. That is ridiculous, right?

It is this idea of, again, flexible spending. Dynamic models allow for this. They assume people make adjustments to their spending based on some series of rules. For better or for worse, we see little of them in financial planning tools today. In my opinion, the models that are in most of them are not very good for two reasons.

1. They cannot handle nonconstant cashflows. Say that the portfolio is doing poorly, and you will get this massive inflow, like an inheritance, in 10 years. The software cannot account for that.
2. Another issue with dynamic withdrawals is just computational timing. Some of the more exotic methodologies can take minutes to run. Planners do not have time for that.

So, this combination of rules that do not work well with uneven cashflows and timing issues resulted in most planning tools not using them today.

In terms of dynamic models, though, one of the easiest and best ones is the modified RMD rule. It's pretty simple, though it is not perfect. It is one over what you define as your retirement planning period. You should also use a personalized estimate for retirement planning periods versus the IRS tables.

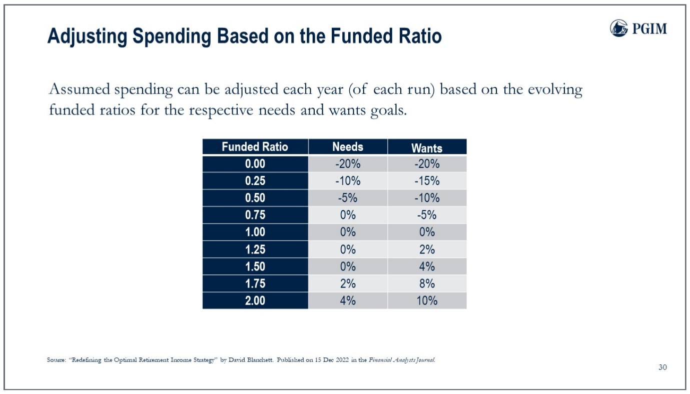
What this does is it results in a withdrawal rate that varies as the retiree moves through retirement. The problem with the four percent rule is that it is irrelevant if you are 85 years old and single. Approaches like this give you a better perspective on how that spending could evolve as you retire. If you recall earlier, the projection that used static withdrawals, the runs diverged over time. They explode because it does not assume any kind of course correction. When you use dynamic methodology, it converges. It assumes that you are spending down your wealth appropriately given your expected final time horizon.

I did mention that most dynamic models do not work if you think about uneven cash flows. If we go back to the approach where I assume that I will change spending based on portfolio returns, how does that factor in, for example, the fact that I might retire at 60 and claim Social Security at 70?

Your withdrawal rate should be much higher, from ages 60 to 70, and then decrease when you receive your Social Security. But it does not work if you focus only on market returns, right? How does it address deferred income annuity or longevity insurance peaking at age 80?

What is most effective at determining whether someone should make a change in their income is their complete financial picture. Holistically, their assets are defined as the portfolio and things like future expected income. Their funded ratio is the value of their assets divided by their retirement liability or the sum of all current and future expected spending. A funded ratio of 1.0 implies that an individual has just enough assets to fund their retirement goal fully. A ratio greater than 1.0 implies a surplus of assets, while a ratio of less than 1.0 implies a shortfall. Each year, you can total all the retirement assets and liabilities and figure out how someone's situation is evolving over time. If the portfolio decreases in value, the funded ratio should decrease. If it goes up, the funded ratio should go up.

Let's say a retiree spends $100,000 a year and possibly increases or decreases that in today's dollars based on how their funded ratio changes. And this is an example of what that income path could look like.



Adjusting Spending Based on the Funded Ratio

PGIM

Assumed spending can be adjusted each year (of each run) based on the evolving funded ratios for the respective needs and wants goals.

Funded Ratio	Needs	Wants
0.00	-20%	-20%
0.25	-10%	-15%
0.50	-5%	-10%
0.75	0%	-5%
1.00	0%	0%
1.25	0%	2%
1.50	0%	4%
1.75	2%	8%
2.00	4%	10%

Source: "Redefining the Optimal Retirement Income Strategy" by David Blanchett. Published on 15 Dec 2022 in the *Financial Analysts Journal.*

More income is possible over time if the markets do well. There is a possibility of less income if the markets misbehave. This is a different perspective than you might fail and have no money in 30 years.

I like this idea of dynamic withdrawals because it gives someone perspective. Telling them, hey, in the worst 1 in 4 outcomes, you might have $75,000 a year of income. How does that make you feel? This tracks how someone would make changes over time based on market performance. You cannot get that with the static methodology. Either you will achieve the entire goal or effectively none of it.

Many advisors think they are already doing dynamic planning. Each year, they tell their clients this is how much they should spend. The problem is that their planning tools are not factoring this in. When you factor dynamic planning in and model these changes you would make, it affects what you would do today. There is a big disconnect.

Now What?

Say I use success rates as my outcomes metric and accomplish my goal in half of them; I have a 50% success rate. But using the same analysis, you could also accomplish an average of 96% of the spending goal. Think about how different that is—a 50% success rate where you accomplished 96% of the spending goal.

Success rates are a series of ones and zeros, meeting the goal or not. If you instead look at this idea of goal completion, then think about if you still need to accomplish your goal; how short am I? When you start to use dynamic methodologies, however, you really cannot use success rates because a success rate evaluates whether you accomplished the goal.

We can do a better job quantifying outcomes and success rates in our industry. It is a very low lift for every single software platform out there. The next step forward is just goal completion. Instead of looking at the run itself and assigning a one if they accomplish the goal or a zero if they don't, estimate the percentage of the goal they accomplish.

In addition, we need to stop telling clients the numbers themselves, especially success rates. An 80% success rate is a good target. If I am going to relay information to a client, do not tell them they have an 82% success rate. What is useful is, "You are on track; come back again next year." Right?

Redefining the Optimal Retirement Income Strategy – David Blanchett

About David M. Blanchett, PhD, CFA, CFP®, Head of Retirement Research, PGIM DC Solutions

David Blanchett, CFA, CFP®, AIFA, is the head of retirement research for PGIM DS Solutions. He works to enhance the group's consulting and investment services. David conducts research primarily in the areas of financial planning, tax planning, annuities, and retirement plans and he serves as the Chairman of the Advice Methodologies Investment subcommittee.

David's research has been published in a variety of academic and industry journals and has been featured in a variety of media publications. In 2014 Money Magazine named him one of the five brightest minds in retirement and in 2014 Investment News included him in their inaugural 40 under 40 list as a "visionary" for the financial planning industry.

He is part of group of retirement thought leaders – truly a breath of fresh air – along with Wade Pfau, Michael Finke and others, who challenge us to go beyond targeting 80% replacement rates, traditional retirement portfolio asset allocations, inflation-adjusted systematic withdrawals of 4% and probabilities of success or failure.

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Aging and the Impact of Cognitive Impairment on Retirement: How to Detect it and What to Do for Your Clients

Quinn Kennedy, PhD, Director of Aging Research at neuroFIT

Editor's note: This article is an adaptation of the live webinar delivered by Quinn Kennedy in 2023. Her comments have been edited for clarity and length.

You can read the summary article here as part of the January 2024 Retirement InSight and Trends Newsletter, worth 1.0 CE when read in its entirety (after passing the online quiz.)

You may also choose to take the full length course Aging and the Impact of Cognitive Impairment on Retirement: How to Detect it and What to Do for Your Clients for 1.0 hour continuing education (CE) credit.

By Quinn Kennedy, PhD, Director of Aging Research at neuroFIT

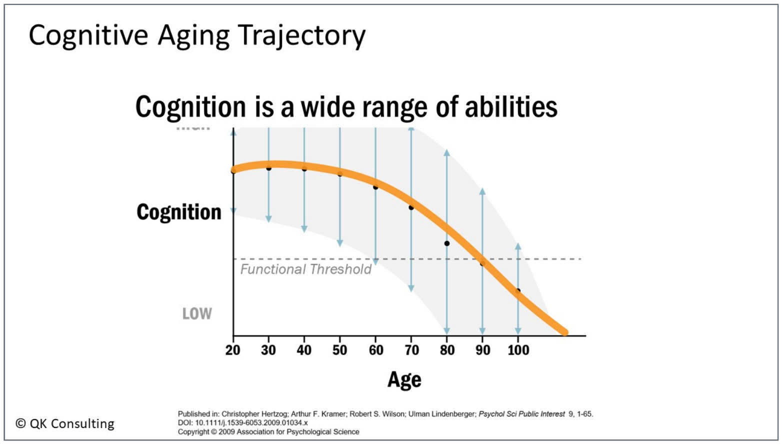
I became interested in the topic of how cognitive impairment can affect retirement savings and vulnerability to financial exploitation after a relative, who had always been very, very sharp with their finances, not only did they start showing signs of cognitive impairment, but also around this time they overdrew from their bank account, not just once, but twice in the space of a couple of weeks.

This relative had a large sum of money in that bank account, which worried us all. What in the world had they spent all that money on? Were they being scammed? What could we do to protect this relative? Today, I will share with you how to identify cognitive impairment and how you can be first responders for your cognitively vulnerable clients.

What is Cognitive Aging?

What do scientists mean by the term "cognition"? Cognition is an umbrella term that describes a wide range of abilities, such as verbal skills, working memory, processing speed, which is how fast your brain works, reasoning, and visual perceptual skills.

What you see here is a graph that you can find in any scientific journal article looking at how some of these cognitive abilities change over the adult lifespan. The orange line represents the typical trajectory. Starting in our 40s and 50s, we may notice subtle changes in how fast our brain works and how well we retain short-term information. These changes become more pronounced with each passing decade. This dashed line near the bottom is what you think it is; it is the point at which there has been so much decline that this person cannot function independently anymore.



Cognitive Aging Trajectory

Cognition is a wide range of abilities

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Published in: Christopher Hertzog; Arthur F. Kramer; Robert S. Wilson; Ulman Lindenberger; *Psychol Sci Public Interest* 9, 1-65.
DOI: 10.1111/j.1539-6053.2009.01034.x
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The gray area with the up and down blue arrows represents the enormous variability from person to person, both in how adept we are, to begin with, on any of these abilities and how long we maintain that good cognitive function.

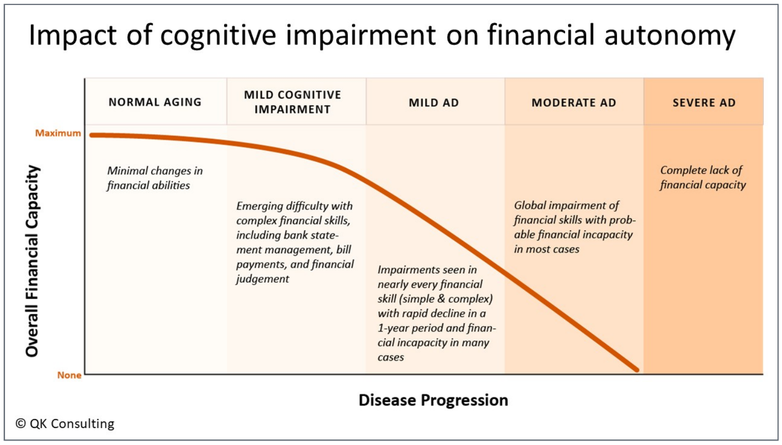
What are the financial implications of cognitive impairment? I will start with a term that I call "financial autonomy." In our society, autonomy, the ability to act on your values and interests and control your affairs, has been a key component of psychological well-being—financial autonomy is having control over your financial decisions and behaviors. For example, deciding to sell your home would be considered a financial decision, and completing the paperwork on that sale would be a financial behavior.

Imagine how you would feel if you needed formal authorization or approval from a relative or fiduciary to sell your home or to access a certain portion of your savings. All of us would be pretty unhappy about losing some of our financial autonomy. As we will see, cognitive function impacts our financial autonomy in our later years. As we see in the graph above, as we get older, we are more likely to experience cognitive decline and impairment.

A recent report from the Alzheimer's Association indicates that about 25% of adults aged 65 or older have been diagnosed with either mild cognitive impairment, which is often a precursor to Alzheimer's or other dementias, or they have been diagnosed with Alzheimer's. About 12-18% of adults have been diagnosed with MCI, mild cognitive impairment, and about 11% with Alzheimer's disease.

As you probably know from your professional experience, the rate of undiagnosed dementia is very high. It is estimated that 63% of community-dwelling older adults who have dementia are undiagnosed, meaning that they are still living at home rather than in an assisted living or nursing home. What these statistics mean is that if your business has 100 clients aged 65 or older, about 25-30 of them may have some level of diagnosed or undiagnosed cognitive impairment.

This graph illustrates how decrements in cognitive function manifest themselves in terms of financial autonomy.



We generally maintain full financial autonomy when we have our typical age-related changes. If somebody is diagnosed with mild cognitive impairment, at this point, they may get into trouble for not paying bills on time or overdrawing from their bank accounts. Here, they would maintain most of their financial autonomy, but even at this early stage, they can be susceptible to financial exploitation.

Moving into the mild stage of Alzheimer's disease, here they may need assistance with everyday finances in terms of paying bills and so forth, but they may still be able to make financial decisions that are consistent with either their previous decisions or with statements that they made when they were cognitively healthy. At this level, they can maintain some financial autonomy.

Between the mild stage and the moderate stage of Alzheimer's disease, there can be much variability in the remaining level of financial autonomy and in which areas. Then, starting with the moderate stage of Alzheimer's disease, at this point, they maintain little to no financial autonomy. They really cannot handle financial decisions or behaviors. As you can imagine, determining a client's current financial autonomy level can be challenging. Having a trained geropsychologist conduct a financial capacity assessment is a good idea.

Let us put some of this information into more of a real-world context. First, cognitive decline in and of itself is associated with wealth loss. One longitudinal study found that a 10-15% decline in cognitive function is associated with a 15-18% wealth loss, and older adults with cognitive impairment are more than twice as likely to experience wealth loss as those cognitively healthy. This wealth loss comes about presumably due to decreased decision-making abilities.

Financial Elder Abuse: Red Flags in Our Client's History

We all know that older adults are popular targets of financial exploitation, but perhaps not the prevalence. A recent Consumer Finance Protection Bureau report found that older adults filed 80% of suspicious activity reports with a mean loss of $34,000, which many older adults cannot afford to lose. Very sadly, this exploitation was often done by someone known to the victim, and in 19% of the cases, the perpetrator was a fiduciary. Older adults with cognitive impairment are three times more likely to experience financial exploitation than cognitively healthy older adults.

Again, we know that older adults can be susceptible to undue influence, but did you know that in 40% of undue influence cases, the victim has dementia? Going back to your 25-30% of cognitively impaired clients, these clients are at a very high risk for wealth loss due to poor financial decision-making, as well as financial exploitation and undue influence. The silver lining with these statistics is that they can be mitigated if your client has a solid social support system with at least one person vested in your client's best interest.

How can you help your clients from financial elder abuse and financial exploitation? One way is to be familiar with the red flags in your client's history that can increase their risk. The first is social isolation; unfortunately, many older adults in the United States live alone, and their family members, if there are any, either live far away or are inattentive. Socially isolated older adults are especially vulnerable to romance scams. Similarly, if you have a client who is going through a recent bereavement, this will also make them emotionally vulnerable to scams and financial exploitation.

Suppose your client is dependent on someone else for their care. In that case, this can put your client in a position where they feel they have no choice but to see to their carer's demands because the carer obviously can withhold medication; they can become physically abusive or emotionally abusive. If an older adult suffers from any substance abuse or mental illness, this can also impair judgment and magnify that emotional vulnerability. Of course, cognitive impairment will exacerbate each of these risks.

Here are some red flags to pay attention to while interacting with your client. I suspect that you are all already quite familiar with these. The main thing here is a noticeable change from their past behavior. One thing to keep in mind is that often, financial exploitation is also accompanied by physical and/or emotional abuse. Financial exploitation is what we observe, but there is also often physical or emotional abuse happening kind of in a hidden way at home. The "See something, say something" adage is really, really important here.

I also want to bring up a couple of subtle red flags regarding family members. First, about 50% of family caregivers handle their parent's or other relative's finances without legal authority, which can lead to problems. If you believe the family member has your client's best interest at heart, then you should recommend that your client give them legal authority to that family member. If you do not trust the family member, then you should act as though they are a possible perpetrator of financial abuse.

This leads to the second point. A very insidious type of financial elder abuse is committed by family members who are unaware that they are exploiting their parents or relatives. This could be the adult son taking care of Mom and giving himself a caregiving stipend with Mom's money or buying himself a fancy new car to "take her to her doctor appointments."

He does all of this without talking to Mom about these financial arrangements. He is doing this all without getting his Mom's permission. This person feels entitled to their Mom's money and does not need their Mom's approval. This is a really tricky one to detect. When you meet with your client, try to determine if this is occurring; you should talk with the family member.

Resources to Help When Clients Show Signs of Cognitive Impairment

The Alzheimer's Association is the go-to spot for familiarizing yourself with exactly what Alzheimer's is, what dementia is, and so forth. They have all these great sections regarding what exactly Alzheimer's disease is, what dementia is, and the difference between them. What I appreciate the most is this resource, "Know the 10 Signs."

For each of the ten early signs of dementia, they describe what a typical age-related change is and when it is a cause for concern. There is also this wonderful handout from the Alzheimer's Association with some general guidelines for having that difficult conversation with your client, how to broach it, and so forth.

Now, you had that conversation with your client; it went well. Next, you can recommend that they go to an Alzheimer's disease research center for a comprehensive memory evaluation. These Alzheimer's disease research centers are in many states across the country. Most of them are affiliated with a university or a medical school. You could find the one closest to your client and recommend that they make an appointment there, or you could make that appointment for them.

I live in California, and I know that the Alzheimer's disease research centers in California provide that memory evaluation for free. That is our state taxes at work. I am not so sure about other states, but I encourage you to have your client go to an Alzheimer's disease research center rather than going to their GP because these people are trained. This is exactly what they do all day long.

Moving on with your client, let us say they went, they got this comprehensive memory evaluation, and they have been diagnosed with mild Alzheimer's disease. What can you do next? Go to a site such as this one, the Older Adult Nest Egg, and you go under the "For Professionals" tab. You will see that they have things about "Financial Vulnerability assessment" and so forth.

I recommend hiring a trained geropsychologist for this financial capacity assessment. This is one where, again, as you all know, in terms of being a financial planner, it is so much better to have someone who is an expert in that particular field assess someone who has not been trained for many years. You can get a trained geropsychologist to do this assessment and they will be able to tell you and your client in which areas that person can maintain financial autonomy and in which areas they need a little support.

Now, you have the National Institute on Aging as a happy, general, wonderful resource. If you go to the "Health Information" section, you can see they also have information about Alzheimer's disease and brain health, and here, they have these short articles written for everyday people on these various topics. Another really great part of this website is this part over here called Get Print Publications.

The National Institute on Aging has created over 70 different fact sheets, pamphlets, and booklets on different aspects of aging. Some of them have been translated into Spanish, and you can download or request hard copies of any of these publications, and even the shipping is free. I encourage you to browse through these publications. I would be surprised if you did not find at least one relevant or helpful to your clients. This is, again, a wonderful, general resource on different aspects of aging.

Now, continuing with your client, who has now been diagnosed with mild Alzheimer's disease, let us say the family does not know what to do. Again, I would return to the Alzheimer's Association's "Help and Support" section. Scroll down to see a section called "Programs and Support." First, they have a 24/7 helpline, and if you look at the upper right-hand corner of the website, that phone number is always listed there. It is also listed on one of your handouts. You can see they have local resources; they have support groups for caregivers, they have support groups for people living with dementia, and they have education programs. You can ask your local Alzheimer's Association chapter to come to your office and give a talk about Alzheimer's disease and what people can do to reduce the risk for your staff and your clients. Again, this is an incredible resource for any question or issue with Alzheimer's disease and dementia.

Let us say that your client's family is struggling with taking care of your client; then, you can refer them to the Aging Life Care Association. These people are experts in geriatric care management. Let us talk about the worst-case scenario. Let us say that before you can help your client get diagnosed and do that financial vulnerability assessment, they were scammed and lost most of their money and resources. In these dire situations, the United Way has a 211 hotline and provides basic needs services. In desperate times, this could be a good resource for your clients. Similarly, if your older client has been exploited by someone they know, you can help find an elder law attorney in their area.

The Good News – You Can Boost Your Cognitive Reserve

Now, onto the good news. While it is great that there are some actions you can take to help your clients once you notice problems, it is even better to be able to provide proactive support to your clients by sharing with them information on how to maintain cognitive function in their later years and therefore reduce their risk for financial exploitation.

Until now, as I mentioned, I have been focusing on the depressing part of this graph, underneath the orange line. Now, I am going to focus on the positive part of this graph, which is above the orange line. All of us here would like to maintain good cognitive function for as long as possible, and that leads to the question, are there things I can do to help my cognitive aging trajectory stay flat rather than decline? The answer is yes.

There are many things that you can do. While the methods I will discuss will help you maintain good cognitive function at any age, they will be most effective if implemented in your 40s and 50s. Our 40s and 50s are pivotal times in which our everyday habits dramatically impact our cognitive function and brain health in our 70s, 80s, 90s, and 100s. I will frame these methods within a theoretical framework called cognitive reserve.

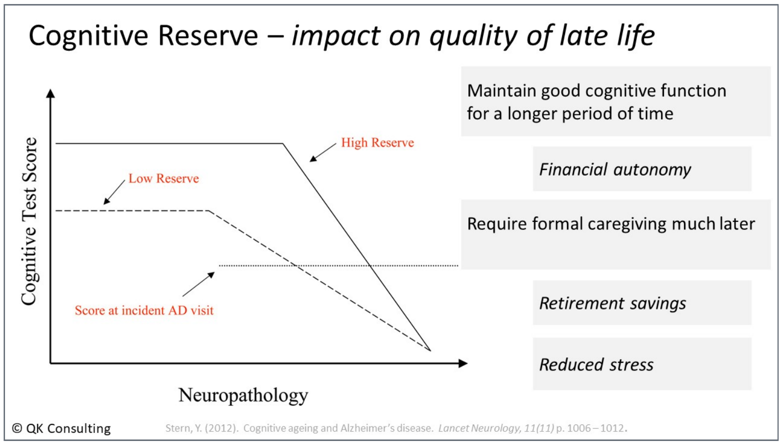
Yaakov Stern developed the concept of cognitive reserve at Columbia University. He defines it as the extent to which we use our brains efficiently and flexibly. I like to think about maximizing the brain you have right now. The background behind how he developed this theory is interesting. Cognitive aging scientists ask middle-aged and older adults to visit labs periodically for several years. Each time participants come to the lab, they complete a whole bunch of cognitive tests and other things.

Some participants very generously donated their brains to the scientists upon the participant's death, and when the scientists did the brain autopsies, they found that some of these brains had moderate to severe nerve pathology, indicating that they had Alzheimer's disease. Then, the scientists went back to see how these people performed on those cognitive tests, and they found that some of these people performed normally for their age and education level despite having moderate to severe nerve pathology.

This led to the question, well, how can it be that these people performed normally despite having moderate to severe nerve pathology, despite having Alzheimer's disease? Yaakov Stern theorized that these people had high cognitive reserve. They maximized the brain that they had. There have probably been hundreds of studies to support this theory. Some of the recommendations from the National Institute on Aging, the Alzheimer's Association, and even AARP are based on evidence coming from this theory.

Today, I will focus on the evidence from engagement in certain types of everyday activities. While these methods will be most effective when implemented in your 40s and 50s, studies show you can boost your cognitive reserve even in old age. The bottom line is that having a high cognitive reserve can help compensate for age-related neurophysiological changes and neuropathology.

This graph illustrates how cognitive reserve impacts the quality of late life, and for only having three lines on it, it packs much information, so I am going to spend some time walking through it.



Cognitive Reserve – *impact on quality of late life*

Maintain good cognitive function for a longer period of time

Financial autonomy

Require formal caregiving much later

Retirement savings

Reduced stress

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Stern, Y. (2012). Cognitive ageing and Alzheimer's disease. *Lancet Neurology, 11(11)* p. 1006 – 1012.

On the y-axis, we have performance on the cognitive test; let us say it is a short-term memory test, and on the x-axis, we have the amount of neuropathology that is building up in the brain over the last 15 years of life until death. Already, this is a little depressing. I am talking about death.

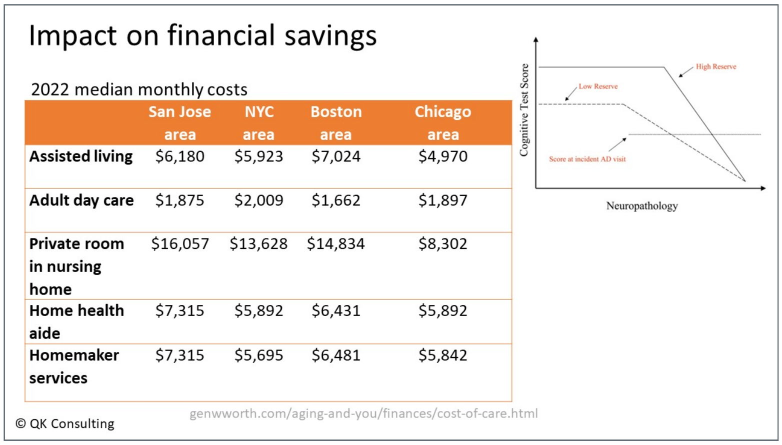
Here we have Michael, who has a low cognitive reserve, and here we have Henry, who happens to have a high cognitive reserve. For simplicity's sake, we will assume that Henry and Michael have the same amount of neuropathology at the beginning of this time frame and that it accumulates at the same rate over those 15 years of life until death. I am going to start with Michael.

Michael performs well on this cognitive test, and despite the accumulation of neuropathology building in his brain, he can maintain that good cognitive function for about seven years. At this point, he starts showing cognitive decline. About halfway between the start of the decline and when he goes to see the doctor is probably when family and friends start noticing and paying attention. That dotted line is when Michael is willing to see the doctor about it, and soon after, some level of caregiving kicks in, increasing to 24 hours until death. Michael spends the last eight years of his life in cognitive decline and needing increasing levels of caregiving during the last five.

Let us move on to Henry. Henry, as you may suspect, performs better on this cognitive test, and again, despite the accumulation of neuropathology building up in his brain, he can maintain that good cognitive function for about ten years. At this point, he, too, succumbs and starts showing signs of cognitive decline. Henry is probably good at hiding his cognitive decline, so it is going to take a while for family and friends to start noticing. Again, that dashed line is when Henry is willing to see the doctor, and probably immediately after, some level of caregiving kicks in, increasing to 24 hours until death.

In comparison to Michael, Henry spends the last five years of his life in cognitive decline and needing increasing levels of caregiving for about the last two and a half years. What this graph depicts, therefore, is that having high cognitive reserve allows you to maintain good cognitive function for a much more extended period, which means maintaining your financial autonomy. It also means that your clients will require that formal caregiving much later, which impacts their retirement savings, a point I will return to in a moment. It also means they are probably walking around with less stress, not feeling they are burdening their spouse or adult children.

Getting back to that comment I just made about retirement savings. Here are the median monthly costs for various formal caregiving services for different areas of the country.



Impact on financial savings

2022 median monthly costs

	San Jose area	NYC area	Boston area	Chicago area
Assisted living	$6,180	$5,923	$7,024	$4,970
Adult day care	$1,875	$2,009	$1,662	$1,897
Private room in nursing home	$16,057	$13,628	$14,834	$8,302
Home health aide	$7,315	$5,892	$6,431	$5,892
Homemaker services	$7,315	$5,695	$6,481	$5,842

genworth.com/aging-and-you/finances/cost-of-care.html

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Staving off the need for adult day care assisted living or a home health aide for three or four years or even longer can significantly impact your client's retirement savings. Again, most of us would like to have high cognitive reserve rather than low cognitive reserve, and again, this leads to the question, are there things I can be doing to boost my cognitive reserve? Very happily, the answer is yes.

Here are some keyways to boost your cognitive reserve. The first one is physical exercise. Regular physical exercise is a fantastic way to boost your cognitive reserve. Regular physical exercise has a double-whammy protective effect on our brains. On the one hand, it increases neural connectivity and cerebral blood flow, which are really good for our brain. On the other hand, it reduces the likelihood of things like cardiovascular disease, chronic stress, and poor sleep, all of which are risk factors for dementia.

Many studies have shown this association between regular physical exercise and cognitive function; today, I will focus on one. It comes from the Wisconsin Registry for Alzheimer's Prevention or WRAP study.

This is a large-scale longitudinal study of over 1,500 participants who are aged 50-70 years at the initial assessment, and 70% of the participants are at high risk for developing Alzheimer's disease because either one or both of their parents had a confirmed diagnosis of Alzheimer's, or they had the genetic risk factor for Alzheimer's, APoE4, or sadly they meet both of those criteria. These people are at high risk for developing Alzheimer's, but they are not yet showing signs of cognitive impairment.

Now, we know that the cognitive impairment that we have seen in loved ones is the eventual external expression of neuropathology that has been building up in the brain. These WRAP researchers examined the association between exercise and the amount of Alzheimer 's-related neuropathology in the brain. They used two different methods to address this question. The first method asked their participants to complete a survey about their exercise habits. In the second method, they asked a subset of participants to complete a VO2 max test, and as you all know, a VO2 max test is when you get on a treadmill or stationary bike and are hooked up to monitors. It is an excellent, quantitative, objective measure of cardiovascular fitness.

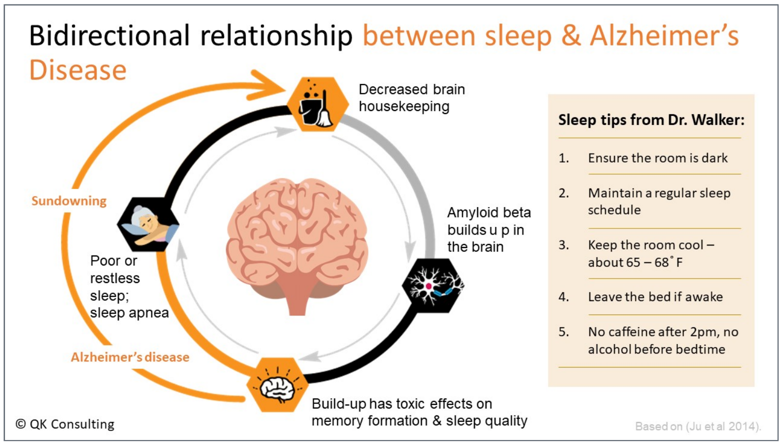
The researchers found similar results from both methods. Among people who reported being somewhat sedentary and who did not have good cardiovascular fitness, the researchers found the expected presence of neuropathology in their brains. However, when they looked at the people who reported exercising regularly and who had good cardiovascular fitness, not only did these people perform better on cognitive tests compared to their more sedentary counterparts, but they also had no significant presence of neuropathology in their brains.

This is a remarkable, remarkable finding. Among people who are at high risk for developing Alzheimer's disease, those who exercise regularly and who have good cardiovascular fitness have managed to stave off the beginning of the neuropathology that eventually leads to the disease. For those of you who already exercise regularly, give yourselves a huge pat on the back; you have been doing wonderful, wonderful things for your brain and your cognitive function.

How much exercise do I need to do to get these amazing cognitive and brain benefits? The answer is 150 minutes a week of moderate to vigorous exercise. It would help if you were breathing harder when doing this exercise than when going about your everyday activities. And if you or your client finds 150 minutes a daunting number, you can think about it as three 50-minute exercise classes a week, five 30-minute walks or jogs, or even a daily 21-and-a-half-minute walk around your neighborhood.

I spend about 21 and a half minutes getting my coffee in the morning, so most of us can find 21 and a half minutes in the day to exercise. Cardiovascular exercise is probably the best thing you can do for your late-life cognitive function and brain health.

The second one is that getting seven to nine hours of sleep regularly is the second-best thing you can do for your late-life brain, and this is really a Goldilocks and the Three Bears situation. Getting less than seven hours definitely increases your risk for dementia. Getting more than nine hours regularly also modestly increases your risk.



Bidirectional relationship between sleep & Alzheimer's Disease

Sleep tips from Dr. Walker:

1. Ensure the room is dark
2. Maintain a regular sleep schedule
3. Keep the room cool – about 65 – 68˚ F
4. Leave the bed if awake
5. No caffeine after 2pm, no alcohol before bedtime

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Based on (Ju et al 2014).

What happens is that when you regularly have poor or restless sleep, it prevents your brain from doing some important housekeeping, where it clears out all the bad stuff from your brain. Because it decreases the brain's housekeeping, amyloid beta builds up in the brain, and amyloid beta is one of the building blocks of Alzheimer's disease. It is what forms the plaques in Alzheimer's.

Unfortunately, some of this amyloid beta builds up in some of the sleep centers of the brain, meaning it makes it harder for you to get good sleep, which decreases the brain housekeeping, which leads to even more buildup of amyloid beta, and so on, and so on. This vicious cycle kicks in, and eventually, it happens often enough that it leads to Alzheimer's disease, and then this leads to sundowning, which is basically when your night and day get shifted. These are when people are up at night and sleepy during the day.

While we cannot control how many hours we sleep or the quality of our sleep, we can control our sleep habits. You see above some sleep tips from Dr. Matthew Walker, a sleep scientist from UC Berkeley. You are probably familiar with most of them.

The new one might perhaps be the last one about no nightcaps. If you struggle to get seven hours of sleep, you must remember that you must go to bed at least seven hours before you get up the following day. You need to allocate at least seven hours of bedtime to achieve seven hours of sleep.

The third best thing you can do for your late-life brain is to have a healthy diet. Eating a healthy diet is important in our late-life cognitive function and brain health. Scientists have ascertained that some food groups, like green leafy vegetables and whole grains, are brain-healthy, and these food groups block that amyloid beta, as well as something called neuroinflammation, which is also bad for your brain. Scientists have also ascertained that some food groups are brain unhealthy, like fast, fried foods and sweets. These food groups increase the amount of amyloid beta in the brain.

A 10-year longitudinal study in which about 1,000 older adults completed annual cognitive and dietary assessments classified the participants based on whether they had high, moderate, or poor adherence to a brain-healthy diet. People who had high adherence to a high brain health diet had a significantly slower rate of cognitive decline than people who had moderate or poor adherence to this diet.

The difference between the high adherence people and the poor adherence people cognitively speaking, high adherence people are seven and a half years younger than the people with poor adherence to a brain-healthy diet. These researchers found similar results with participants who had suffered a stroke, and kind of as a side bonus, having a brain-healthy diet is associated with a lower risk of depression—some powerful effects of diet on our long-term cognitive function.

The last way I will cover today is on everyday activities. Researchers have found that having high levels of cognitive engagement in everyday activities can also help delay or slow down normal, age-related cognitive decline, as well as reduce your risk for dementia.

Dr. Denise Park and her colleagues theorized that learning a new skill could be one way that people boost their cognitive reserve. She asked middle-aged and older adults to sign up for a course to either learn digital photography, quilting, or how to use all the apps on their iPads. This was a big commitment for these participants because it was a three-month course with about 15 hours of coursework per week—a significant commitment for these participants.

She also had what we call an active control group. These were similarly aged people who spent the same 15 hours a week for three months doing something they already knew how to do. Regardless of the group, everybody took cognitive tests before and after those three months.

What Dr. Park found is that when people learned a new skill, not only did they show significantly greater improvements on those cognitive tests compared to the active control group, but they also showed what she called reliable improvements in memory. She defined having a reliable improvement in memory as showing at least a one standard deviation increase in performance from baseline—a pretty substantial improvement.

What is exciting about this last result is that she found reliable improvements in memory even amongst the oldest participants, who were in their 80s. Learning a new skill is a great way to boost your cognitive reserve. Learning and practicing mindfulness have some wonderful benefits for our aging brains. I was involved in some research suggesting that activities that require good processing speed and working memory may benefit the most. Again, processing speed is how fast your brain works.

Now, just like with exercise, we have that criterion of 150 minutes to get cognitive benefit. We also have a couple of criteria for an everyday activity to be cognitively boosting. First, you must find it interesting; otherwise, you will not do it. Secondly, it must be at least moderately challenging. When doing this task, you are focused; you are making mistakes and must try multiple times before you get it right. To put it in the context of a popular conception, if you regularly solve the New York Times Sunday magazine crossword puzzle, doing more crossword puzzles will not really boost your cognitive reserve. It would help if you shifted to the sudoku or the spelling bee.

The second point I want to make here is that this will be a very personalized, individualized list of activities. What I find interesting and challenging differs from what someone else finds interesting and challenging. There is no generic list of cognitively engaging activities. If you are already a polyglot, learning an eighth language is not going to be as beneficial as someone who is about to learn their second language. It is a very personalized list of activities.

Key Takeaways

- Unfortunately, the number of older adults with cognitive impairment, either diagnosed or undiagnosed, is relatively high, possibly higher than many of you realized.
- Cognitive impairment negatively impacts older adults' ability to maintain financial autonomy, and again, financial autonomy is the ability to control your financial decisions and behaviors.
- Cognitive impairment also dramatically increases the risk of financial exploitation, undue influence, and wealth loss due to poor decision-making.
- The good news is that there are several steps that you can take to protect your older clients, such as becoming familiar with the difference between typical age-related changes in cognitive function and signs of cognitive impairment.
- You can also hire that trained geropsychologist to conduct a financial vulnerability assessment to determine which areas the client still has financial autonomy and where they need support.
- Finally, encouraging your clients, especially those in their 40s and 50s, to follow a healthy lifestyle can substantially help them maintain good cognitive function in late life and preserve their financial autonomy.
- Research has found that people who follow a healthy lifestyle through regular exercise, adequate sleep, healthy diet, and so forth reduce their risk of dementia by 30-60%.

Aging and the Impact of Cognitive Impairment on Retirement: How to Detect it and What to Do for Your Clients – Quinn Kennedy

About Quinn Kennedy, PhD, Director of Aging Research at neuroFIT

Dr. Quinn Kennedy earned a PhD in Psychology and completed postdoctoral training in Cognitive Aging, both at Stanford University. She is the Director of Aging Research at neuroFit.

Dr. Kennedy has over 20 years of research experience in investigating factors that affect older adults' decision making, memory and performance.Dr. Kennedy's research has been recognized through multiple awards, grants, and peer reviewed journal publications including Psychological Science, Psychology of Aging, and Journals of Gerontology. With her collaborators, her work has been featured on Channel 2 news, NPR, The New York Times, San Francisco Chronicle, and Science. Dr. Kennedy is a popular speaker on healthy cognitive aging, conducts the workshop, Planning for your late life brain: habits you can build now to maintain cognitive function later, through Stanford Continuing Studies, and is a guest contributor to Psychology Today. She has partnered with Peter Johnson of PW Johnson Wealth Management with an online webinar series designed to illustrate why cognitive boosting activities should be incorporated into retirement planning. Through her consulting business, Dr. Kennedy works with companies to incorporate lifestyle activities that promote good cognitive function into their business model.

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AI in Action: Exploring the Use of ChatGPT in Retirement Planning

Eric T. Ludwig, PhD, CFP®, Assistant Professor, Retirement Income, RICP® Program Director Executive Director, Center for Retirement Income

Editor's note: This article is an adaptation of the live webinar delivered by Eric Ludwig in 2023. His comments have been edited for clarity and length.

You can read the summary article here as part of the January 2024 Retirement InSight and Trends Newsletter, worth 1.0 CE when read in its entirety (after passing the online quiz.)

You may also choose to take the full length course AI in Action: Exploring the Use of ChatGPT in Retirement Planning for 1.0 hour continuing education (CE) credit.

By Eric T. Ludwig, PhD, CFP®, Assistant Professor, Retirement Income, RICP® Program Director Executive Director, Center for Retirement Income

The retirement planning landscape is rapidly evolving with the advent of AI technologies. While these tools, like ChatGPT, offer promising enhancements in client communication and operational efficiency, they also present challenges in integration and understanding. The implications of not harnessing AI effectively can lead to missed opportunities and inefficiencies in service delivery.

Advisors need to embrace AI as a valuable tool while also recognizing its limitations, paving the way for transformative advancements in the field and ultimately improving the retirement readiness of individuals and communities. Financial planners and advisers need to understand the potential and pitfalls of AI, specifically ChatGPT, and how to incorporate it strategically into their practices for optimal benefit.

General Eric Shinseki is a retired general. He said, "If you do not like change, you will like irrelevance even less." Technology continues to be developed, no matter what the form is. It is essential to stay informed.

If you are a financial planner, we consider ourselves knowledge workers. Why is this important? Well, the thing that sets us apart from, say, manual laborers is our knowledge. Knowledge is our capital. There is a saying that you get paid more from the neck up than from the shoulders down.

The downside for knowledge workers is that our debt is time, and we have a bottleneck problem. We have lots of ideas and opportunities and are responsible for administrative work. We must consider the best use of our time and look for ways to make things easier and more enjoyable or help us be more productive. This sets the stage for why using technology in general is important.

An Introduction to ChatGPT

I had dinner with my folks a couple of weeks ago. My parents are in their 70s. I asked them, "Do you use artificial intelligence?" My mom said, "No, I do not use AI." I asked her, "Have you ever said, "Hey, Google?""

Sometimes, on accident, you say, "Hey, Google," and your phone pops up. That is AI. What about if you are working in a Word document or Outlook? Do you ever notice that as you are typing it, it sometimes completes your sentence? That is a type of AI. How about when you are sending a text? Sometimes, even before you send the text, the incoming one says, "Here are three different responses you might want to choose from." That is artificial intelligence. How about Netflix? "Based on your watching patterns, we think you would like to watch these things." The point is that we already use AI.

How is this different from a search engine in Google, for example?

For one, there is this functionality aspect. ChatGPT is what I am going to focus on. It is very conversational. The chat part of ChatGPT is interesting.

With Google, you search, and then that is it. Right? Whatever your second search is, it does not matter what the first term was; they are independent searches. ChatGPT, however, is a conversation. Whatever you put in after your first prompt or request is part of that conversation. It can reference itself.

From a data source perspective, it's different than Google. Google is constantly crawling the web and, theoretically, always getting the most up-to-date information based on whatever it is that you are searching. ChatGPT is different. AIs are different. Each one is different from the other. Bing has a ChatGPT type of thing. That one references the live web.

ChatGPT is different. It is trained on an extensive set of content from the internet, and then it relies on that as its data source. For a real-time update, it depends on which version you are using. For example, if you know about current inflation as of October 2023, the default answer might be, "Hey, I am only up to date until

September 2021." Some things to be aware of.

The G in ChatGPT means "generative." So, what does generative mean? Unlike a passive type of AI, it generates content based on your prompts. P stands for "pre-trained," meaning it was based on information, based on the internet. T stands for "transformer," which is how it takes the inputs you give it and then transforms them back to you in the media you prefer (including audio).

How popular is ChatGPT? The popularity of tech, in general, is measured by the time it takes to get to X number of users. One hundred million users is usually a good benchmark. How long did it take for Netflix, which came out in 1999 as a DVD exchange service, to reach 100 million users? Ten years. How about Facebook? Facebook came out in 2004, and it took 4.5 years before reaching 100 million users. Instagram took two and a half years to get to 100 million users. ChatGPT came out in November of 2022. It took just two months to get to 100 million users.

How do You Use ChatGPT in Retirement Planning?

Should advisors use this in practice? Maybe. If you are in a compliance role, you will appreciate this. Does it matter if the output is accurate? If not, go ahead. You are safe to use ChatGPT.

Do you have the expertise to verify that the output is accurate? Again, if the answer is no, and this is outside your domain, then we will say it is unsafe to use. Are you able and willing to take full responsibility for any inaccuracies? It puts you, as the expert, in the role of filtering this type of information.

What are some ways that you could use this in practice? How about from a research aspect when you need to prepare for a client meeting regarding a tax law change?

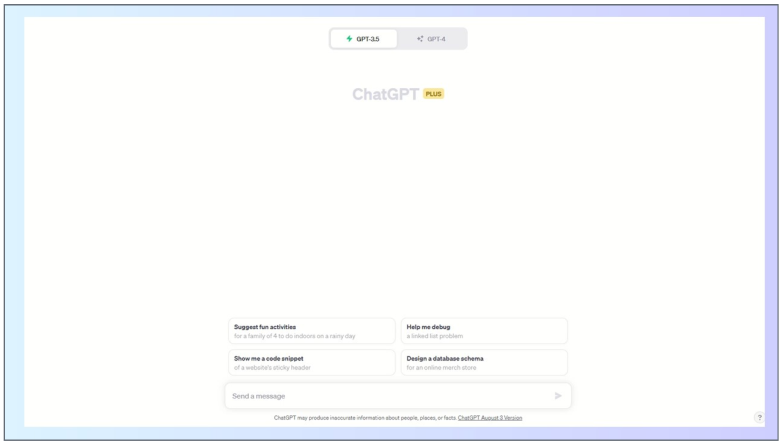
How about from a customer service perspective or a content creation perspective? Sometimes, when I want to write an article or a newsletter, I have a vague idea of what I want to do, but I need help getting a first draft.

What about retirement planning recommendations? This is the big question mark. Can you use it to help generate recommendations for clients through the retirement planning process? Maybe.

What are some things that you find yourself Googling today? Tax rates, what laws have changed? We have contribution limits, RMDs, tax brackets, and retirement strategies.

What might this look like if you ask Google, "Explain how RMDs work."? You get a ton of results. Some of those might be accurate, but some of them need to be updated. This is not unique to ChatGPT. Anytime we query a source, we need to do a fact check. The problem with this is that it can take a lot of time. Which one of these should I rely on? Is it accurate?

So, let us use an example here. If you open a search browser and type in ChatGPT, the official one is from openai.com. I am using the free version, which is version 3.5. You can pay $20.00 monthly if you want to use GPT 4.



ChatGPT may produce inaccurate information about people, places, or facts. ChatGPT August 3 Version

When I type in "how required minimum distributions work," it generates the text quickly and gives me a list of six things. Every time you do this, the results are slightly different. When you select "regenerate" at the bottom, it will display a different response.

Then, you can query from a customer service aspect. Ask, "Can you please explain what an RMD is again?"

Then, tell ChatGPT, "I am a financial planner, and a client asked me that question. Respond to my client as me so I can email them back." The interesting thing about this is that it knows we are having an ongoing conversation.

Chat GPT responds with the subject line: Explanation of RMDs. It describes RMDs as essential to retirement planning and has six bulleted items. It finishes with, "Incorporating this in your strategy is essential. And please do not hesitate to reach out with more questions." And it gives you a salutation.

Would you ever copy and paste that output and call it done? No, right? It is not written in your voice. This is a perfect first draft.

Next, let's test ChatGPT's recommendations. Let's ask it what it thinks the best RMD strategy is. Type in a generic question. "What is the best RMD strategy?"

Have you ever had a friend who is a know-it-all? That, by the way, is ChatGPT. Whether it knows the answer or not, it will give you an answer. For this query, it provided a 10-item bullet point.

You can also use this from a content or ideation perspective. You may be trying to write a quick blog post. Write, "As a financial planner, this question comes up often. For my monthly newsletter that I send to clients, write a 250-word column for the newsletter explaining RMDs."

It gave the article a title, and that is great. Even though we told it that we were writing a newsletter, it wrote it as an email.

What is Prompt Engineering?

Prompt engineering is the differentiator. Sometimes, people say, "I played around with it, but it did not give me the response I was looking for." Absolutely. Part of this, like anything, is knowing how to use it.

So, what is prompt engineering? Well, it is part art and part science. And the whole purpose is that it involves crafting or adjusting the input that you provide in a way that improves the model's response. In other words, you are trying to give it a better prompt and instruction to get a better response.

Because we are in the financial planning world, we devised an acronym called rATe.

- R is role
- A stands for ask or assignment
- T is the tone
- E is extras.

In your prompt, define the role. It could be your role but also who you are writing to. For example, I am a financial planner and writing a client newsletter.

The A is the ask or the assignment. This is the meat and potatoes you are telling it to do. Think about the output you want to get from this: is it to explain something or a bulleted list? What is the format that you want to see this as? Is it one line? Is it just a single paragraph? You can tell it to keep it to 250 words or that you want four paragraphs.

People have asked, "Well, can I just have it write a whole book?" The answer is yes, you can, but there is also a limit on the amount of text that it will generate for any given prompt.

T is tone. Like in any other setting, you decide the tone you are writing or speaking in. Is it a professional tone or with humor? Respectful versus irreverent. Enthusiastic versus manner of fact.

E is for a general set of extras that you could do. There is one that I like. Because ChatGPT is an interactive tool, you can ask, "Hey, what else would you need to know before doing it?" So, that one is an interesting one.

You can also ask for a response from a committee aspect. "I want an investment recommendation, but you are a committee of four investors." You could say, "I want to use John Bogle, Warren Buffett, etc." Come up with that list and say, "I want a response from each of you." That is interesting.

Sometimes, you will go down a path and realize it is stuck. Sometimes, you have to tell it to ignore everything we have discussed up to this point. The other way to do that is to create a new session. But sometimes, you visually want to reference the information you have generated.

Returning to that original RMD example, we will implement the prompt engineering aspect to see if we can get better output. The original idea was, "What is the best RMD strategy? But ask me questions before you respond to get specific results for me."

Here is a sample ChatGPT prompt engineering example:

> "What is the best RMD strategy? But ask me questions before you respond to get specific results for me. I am 75."
> "Do you have multiple return rate costs or just one?"
> "I do not know … three Traditional IRAs."
> "Have you already started taking RMDs? Or will you in the future?"
> "Yes." (I would like to see what it thinks my answer is because these are two different questions in one.)
> "Do you have any specific financial goals or needs such as using for living expenses?"
> "Yes, I need them for living expenses."
> "Are there other sources of retirement income that you will rely on during retirement?" "Yes, I have Social Security and a small pension."
> "What is your risk tolerance and investment strategy for the retirement accounts?"
> "Moderate."
> "Are there any anticipated changes in your tax situation?"
> "Yes, I think rates will increase."
> "Have you considered Roth conversions?"
> "No."
> "Here is a tailored RMD strategy for you."
>
> - Continue to ensure that you meet the IRS's minimum distribution for each of your three IRAs.
> - Prioritize living expenses.

- Since you need your RMDs, planning for consistent distributions throughout the year is wise.
- Discuss partial Roth conversions with an advisor on converting a portion of your IRA to Roth. It can help manage future tax liabilities significantly if tax rates rise.

Then let us continue and say: "As a retirement advisor, that was for a client. Write an email to the client with the specific recommendations." Again, we are trying to use prompt engineering. We are telling it who we are, who we are writing to, what we want it to do, and the format of it.

Let's end with something funnier: Say you are a retirement planning expert. So, I am giving it a role. I am going to tell it to write a blog post about RMDs. I will ask it to write in the voice of Cookie Moster, with the audience being a group of retirement planners. Here's what it came up with.

"Hello, hello, me friends in retirement planning! Me, Cookie Monster, and I are here to talk about something very important.

It does add a disclaimer. "This advice is for fun, not a substitute for professional financial advice. Please consult the financial expert for planning guidance."

My point here is not to do something silly but to show how you can get creative with it and think about different ways that you would want to get the type of output.

What are the Limitations of ChatGPT?

The first is that it is a know-it-all. You could give it very little instruction, which will still generate a response. Whether or not you think it is a good one, whether it is helpful or not, it will generate something. It is just technology, so that is its job. I like to think of it as garbage in, garbage out.

Sometimes, the feedback I hear is, "Oh yes, I have used ChatGPT," Or "Yes, it just did not do what I thought it would." It may be based on the type of prompt that you used. This gave you some initial ideas on the ways that you could improve the actual prompt.

Think of this as our first draft. I would never copy and paste this and go with it. We started this by talking about the time savings element for today's knowledge worker. And this provides some initial thoughts on how to get you past that getting stuck in your head. At least, that is how I feel.

With the trapped-in-time element, remember that if you are not using the paid version, ChatGPT is up to date with current events until around September 2021. So, again, what did the stock market do today? It is going to respond, "I have no idea." The paid version, Bing, or even Google Bard, queries the internet. Just be aware that some of it could be trapped in time or up to date; it depends on which AI platform you are using.

Hallucinations is this term where AI makes up answers. An attorney was trying to find a reference for some legal case. He said, "Provide a citation for this legal precedent." And it came up with one. The attorney asked ChatGPT, "Are you sure that is a real law case?" And it said, "Yes, it is."

The legal precedent ended up not being a legal precedent. A judge couldn't verify it. My point is to be aware; it is up to you to decide whether it is valid.

Back to our RMD example. The age ChatGPT recommended for starting RMDs was 70 1/2. It mentioned something about age 72, but it is not. secure 2.0 passed, and it changed it to 73. Right? And there is a future bump in there to 75 down the road. My point is that you are the expert for your clients. So, be the expert. Retain your expertise, and ensure that if your clients are using it, you have some idea now of the type of output it generates. And you can step in and be that buffer to say, "Look, I have used it too. Sometimes, it generates information that is not right." So, be that expert for your clients.

Key Takeaways

The first is just how rapid the adoption has been. Twenty percent of adults living in the United States have at least tried ChatGPT or one of these so-called generative AIs. If you have not used it, you probably will. It will be like smartphones. I can remember when I got my first smartphone. And I thought I was pretty cool because I was one of the first. ChatGPT will be similar to that, where it will either be people who have never used it versus those who have used it. That gap will keep tightening.

The other is this idea that AIs, in general, whether ChatGPT or something else, streamline retirement planning operations if you know how to use them. The whole point is to free up some of the time you spend not on technical-based activities but to free you up from some of these routine things you must repeatedly do.

My example was responding to generic emails, which you could use to quickly get a good first draft. We also reviewed an example of where we told it to ask questions before responding. You could do that in a variety of situations. It could be a different retirement scenario, giving it something more specific about the client you are working with or having it generate some initial ideas.

From a risk assessment perspective, you can help it generate a more dialed-in risk profile questionnaire to come up with. From a portfolio diversification perspective, you could paste in a client's current holdings in addition to the risk tolerance questionnaire you have generated; it could help give some ideas on portfolio changes and other long-term strategies.

I think the main thing is to not just rely on its first answer as being correct unless you, based on your human expertise, can be the buffer to say, "Yes, that is correct" or "No, it is not."

About Eric T. Ludwig, PhD, CFP®, Assistant Professor, Retirement Income, RICP® Program Director Executive Director, Center for Retirement Income

Eric Ludwig, Ph.D., CFP, stands at the intersection of academia and real-world financial expertise. As a well-regarded retirement planning thought leader, he serves as an Assistant Professor of Retirement Income and directs the RICP® program. In his role as the Executive Director of the Center for Retirement at The American College of Financial Services, Eric's dedication to research and innovation is evident. He's committed to crafting solutions that not only ensure financial stability for investors but also enrich their personal lives, recognizing the intertwined nature of financial security and personal fulfillment in retirement.

AI in Action: Exploring the Use of ChatGPT in Retirement Planning – Eric Ludwig

Ludwig has been in the financial services industry for over 16 years, ten of which as the CEO at Stockbridge Private Wealth Management. This blend of hands-on industry experience and academic rigor equips him with a dynamic and pragmatic viewpoint. His multifaceted expertise as a practitioner, educator, and researcher grants him a profound grasp of behavioral finance and retirement planning, leading to pioneering research in the field.

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