

MD Life

FEBRUARY 2024



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verdict
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practitioner**

**Failure to Treat
Hyperthyroidism
Charged
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**Misdiagnosis
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Contents in This Issue

Escaping the Time Warp: My Journey After Leaving Clinical Medicine
Big Tech is Listening and Tracking Your Voice Recordings. How to Make it Stop!
The Top 5 Physician Side Gigs of 2024
2024 "Sure-To-Be-Wrong" Economic Predictions
A Patient Reached Out to a Doctor and They Helped Each Other Heal
[50 Easy Snacks for the Super Bowl](#)
Senior Health Care Leaders: This is What a Psychopath Looks Like - Please Fire Them
A Las Vegas Survival Guide: The Dos and Don'ts of Sin City
What Will Blood Testing Look Like In The Near Future?
Apple Vision Pro Review: A Mind-Blowing Look at an Unfinished Future
The Dakota Studios

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Escaping the Time Warp: My Journey After Leaving Clinical Medicine

KEITH POCHICK, MD

It's been almost two years since I left clinical medicine. In the midst of our country's health care attrition crisis, stories of early retirement, burnout, and career transitions aren't hard to find. While each of those accounts brings a deeper understanding of the problem, as well as potential strategies to remedy it, this is not a story about why I left medicine. Instead, it is an observation of how medicine warped my own reality without me knowing it was happening.



I spent two decades as a frontline physician in emergency and urgent care medicine. With my chosen trade came numerous benefits that inarguably improved my life – financial security, smart and witty colleagues who became great friends, and, for a time, professional fulfillment. I'm grateful for those gifts, as they've helped me arrive healthy at this moment. But only now, after two years away, do I realize that an aspect of my former career harmed me. Those twenty years on the ER and UC frontlines severely damaged my sense of time. I'll try to explain what I mean and how I think it happened.

I did my EM training in a busy, urban level 1 trauma center. The approachability of attending physicians, combined with high acuity, volume, and patient diversity, drew top-tier medical school graduates from across the country. My residency experience was incredible. I gained the expertise and confidence to enable a nearly seamless transition to a career in non-academic emergency medicine.

For twenty years of my work life, I navigated a vast sea of humanity with the singular, short-sighted goal of arriving at the next case. When I left a patient room (or hallway stretcher), I sought out the next patient. Many times, I was directed by staff and colleagues to the one who needed the quickest attention and interventions. Just as often, I scanned the new arrivals on the tracking board and prioritized patients based on the perceived danger of their presenting problems, age, and vital signs. In the ER, the work is never really completed; it's just that a different platoon of staff and clinicians arrives to take over. Over my two decades in medicine, mid-shift reprieves became less and less frequent; they eventually became non-existent. Nowhere does nature abhor a vacuum more than in an urban ED. Every time a space is vacated, it is instantly filled. About five years into my post-residency career, I remember hustling to see the next patient during an insane evening shift when I chanced upon a seizing, vomiting, and cyanotic patient on a hallway stretcher. The rest of the staff was in other rooms. "Pull someone out!" I shouted. This is ER code speak to evict a mostly stable patient from their ER bay to make room for the immediate resuscitation of another patient. In the ensuing months and years, overburdened and understaffed became the normal, accepted day-to-day work environment.

Volumes have been written on "the tragedy of the commons" that has befallen emergency medicine, and dozens of helpful suggestions, strategies, and modifications have been proposed. Some have been enacted. This piece is not intended to add to that conversation; it is written as a reflection, from the perspective of a former insider, on one of the ways the work environment described above injured my psyche and personality.

Early in my clinical career, I really liked repairing lacerations, particularly facial lacerations. I also enjoyed making connections with troubled and “difficult” patients. To perform tasks like that, I needed to spend some extra time with those patients. This is not to mean that those cases required an inordinate amount of time – only that 3 to 5 minutes was insufficient to do the job well. But I quickly discovered that any satisfaction I received from the 20 to 30 minutes preparing and repairing a complex facial laceration would soon be replaced by the urgency of 5 to 6 new arrivals. Often, more than one of those new arrivals needed immediate evaluation and intervention. Subconsciously, I knew that in the absence of a mass casualty event in the universe we occupy, that amount of illness and injury couldn’t possibly occur at a single location in 20 to 30 minutes. So, my subconscious brain began to perceive 5 minutes spent with a patient as a half hour. 20 minutes in a single patient’s room meant that someone in shock wasn’t getting the interventions they needed. They meant that a 75-year-old with a leaking abdominal aortic aneurysm was languishing with one foot already in the grave; those 20 minutes meant that a dialysis patient with hyperkalemia was approaching cardiovascular collapse. In this new reality, I stopped enjoying repairing complex lacerations; I didn’t spend as much time working to connect with the difficult patients. Years in the ER had given me the worst imaginable version of FOMO.

This twisted perception of time carried into my life away from work. Checkout lines, traffic, and phone conversations became anxiety-riddled misery. Picking up my kids after a sleepover or playdate became a quest to unceremoniously peel them away from their friends as quickly as possible. On departure day after a trip or long weekend, I prodded my family to move along to leave as early as we could. I knew that I was impatient, but brushed it off as “just my personality.” Until I left clinical medicine, I never considered that maybe I wasn’t programmed to be impatient; I never thought that there was much more to it than my DNA and other internal factors.

For a dozen reasons, I left medicine and began teaching middle-school science two years ago. My current work environment is 90 percent positive energy – it’s challenging and unpredictable, but filled with autonomy, supportive colleagues, and fun personalities. I am happy to drive to work again and feel like I’m exactly where I belong professionally. Over the last couple of months, I’ve noticed that my personality has changed. Perhaps “reverted” is a more accurate word. I believe the most significant change is that I’ve recovered a healthy, normal perception of time. When I feel like the lab full of 8th graders has been dissecting chicken wings for 45 minutes of an hour-long class, I look at the clock, and it agrees with my perception. When I have 20 minutes to spend eating lunch before heading to lunch duty, those 20 minutes feel exactly like 20 minutes should feel. When I meet with a student who needs to make up a lab or spend some enrichment time, I don’t feel internal pressure to hurry and move to the next task. In less than two years, I’m different than who I was. I’d like to think that recovering time has made me a better version of myself.

None of this is to suggest that modern physicians and clinical health care workers can’t live emotionally healthy lives – I personally know dozens who are pulling it off. Maybe if I had been more introspective, learned to employ mindfulness strategies, adopted yoga, or sought professional advice, I could have maintained a healthy sense of time during my career in clinical medicine. I won’t ever know if that’s the case; I’m an imperfect person who is mostly just making it up as he goes along. I guess my hope for this essay is that it compels the frontline clinicians who need it to pause, pull back, and get an aerial view of themselves. Has your job changed you? How? Are some of those changes negative? How and with whom do you start a conversation about those changes?

Keith Pochick is an emergency physician.

Big Tech is Listening and Tracking Your Voice Recordings. How to Make it Stop!

BY KIM KOMANDO, KOMANDO.COM



Most of what you type, say, search and buy is being tracked in one way or another. Big Tech gives us great free products, and the price is our privacy. Even your TV habits are packaged up and sold to advertisers

Some snooping is even more invasive. Worried someone is spying on your phone?

You can fight back. You can buy a [mic blocker](#) for around \$10. It slides into your headphone port to stop recording. For an even cheaper DIY option, buy the most [inexpensive pair of headphones](#) and snip them off.

Here's how to limit what you're handing over to Big Tech.

Amazon

Whenever I write that your Echo device is always listening, Amazon assures me it's only listening for the "wake word." I don't see the difference here. Either way, if you have an Echo, there's not much point in keeping it around if you turn off the microphone.

The real issue is Amazon employees listening to your recordings. Here's how to stop that:

- Open the **Alexa app** on your phone, then tap the **More** menu button.
- Select **Settings > Alexa Privacy**.

- Choose **Manage Your Alexa Data**.
- Turn **off** the toggles next to “Help improve Alexa” and “Use messages to improve transcriptions.”

In certain situations, you can turn the Echo’s mic off for extra privacy. Press the microphone’s off/on button at the top of the device. Whenever this button is red, the mic is off. To reactivate it, press the button again, and it will turn blue.

Your cell phone

Do you rely on Siri to get things done for you? You might not realize how much is being sent back to Apple’s servers.

Since you can’t really pick and choose what is shipped off and stored, your best bet is shutting down Siri if you’re not comfortable with Apple having your recordings.

- Open the **Settings** app on your iPhone.
- Scroll down and tap **Siri & Search**.
- Toggle the green switch next to “Listen for ‘Hey Siri’” to the **off** position.
- You can also turn **off** “Allow Siri When Locked” to prevent Siri from activating when a button is pressed in your pocket.

Use an Android? Here’s how to turn off the “OK Google” wake phrase:

- Open the **Google app** on your phone.
- Tap your **profile picture** in the upper-right corner.
- Choose **Settings > Google Assistant > General**.
- Slide the toggle next to Google Assistant to the left to turn it **off**.

Your computer

Are you worried about someone spying on you through your webcam? Put a Post-It over the lens if you don’t use it much.

Unfortunately, you do have to root around your computer a bit to turn off mics.

For PCs running Windows 10:

- Right-click on the **Start button** and open **Device Manager**.
- In the Device Manager window, expand the audio inputs and outputs section, and you will see your microphone listed as one of the interfaces.
- Right-click on **Microphone** and select **Disable**.

On a Mac:

- Click the **Apple menu > System Preferences...**
- Select **Sound > then the Input** tab.
- Drag the Input volume slider to the left so it can’t pick up any sound.



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THE TOP 5 PHYSICIAN SIDE GIGS OF 2024

Themotivatedmd.com



Some fascinating data was released by Medscape recently toward the end of 2023. With physician side gigs garnering more and more attention, they decided to release a survey of physicians and their side gigs. Of the respondents included, 39% of physicians had a side gig. This statistic surprised me. With physicians already making high incomes, I figured discussions of lucrative physicians' side gigs were largely a nuanced product of our personal finance community. However, some of Medscape's data would suggest side gigs are more common than I thought.

I spend a lot of time writing about physician side gigs. It is a no-brainer to leverage your medical expertise and even your excess capital, or better create supplemental income, be that in the medical field or outside of it. If you are still determining if a physician side gig is right for you, check out [Is a Physician Side Gig Right for You?](#) This week, we look at the top 5 physician side gigs of 2024. Here is a brief review of some of the more lucrative side gigs and how you can get started!

1. Paid Medical Surveys

First on the list is an excellent gateway into the world of physician side gigs. The concept of paid physician surveys is not novel to most of our readership. However, I continue to include physicians' surveys at the top of our list because of how lucrative they can be and how time-efficient they are.

Put simply, your medical opinion matters. Depending on your specialty or subspecialty, it *really* matters. Many large companies (pharmaceuticals, devices, information technology) are innovating and need the opinion of providers. These companies commonly use third-party firms to facilitate these surveys. Companies like M3 Global Research, All Global Circle, Zoom Rx, InCrowd, OpinionSite, and more all offer avenues for physicians

and other healthcare providers to sign up. Of note, surveys are not exclusively for physicians only. There are opportunities for advanced practitioner providers, veterinarians, dentists, pharmacists, nurses, etc. Don't miss out!

It is essential to understand that certain professions and specialties lend themselves to more surveys. Fields like oncology, rheumatology, cardiology, pulmonology, and surgical specialties often have more frequency with which they are offered surveys. This is mainly because their fields require novel interventions or medications regularly, and these discoveries are usually very lucrative for business. Thus, medical input impacts their progress. However, I encourage everyone to consider signing up. The more platforms you sign up for, the more frequently you will be sent surveys.

Surveys can range from five-minute micro-surveys and 30-minute online surveys to telephone interviews that can pay hundreds of dollars or more. There are a lot of great opportunities for physicians to periodically use their free time to share their medical opinions, impact innovation, and make supplemental income in the process! Here are some more resources if you wish to have more information; check out [Make Money with Medical Surveys](#), and follow the link below to see all the Paid Physician Survey Platforms we partner with!

2. Medical Legal Consulting

Next up on the list is another very lucrative way to leverage your medical knowledge to create additional income in your spare time. Medical-legal consulting is a specialized niche within the legal industry where physicians apply their medical knowledge and expertise to assist attorneys and legal professionals in cases involving medical issues. Medical-legal consultants serve as intermediaries, bridging the gap between medicine and the law.

Primary responsibilities include:

- Reviewing medical records
- Providing expert opinions on medical matters
- Assisting with case preparation
- Testifying in court as an expert witness when needed

A physician's role in these matters, such as medical malpractice suits, personal injury claims, disability claims, and workers' compensation cases, can prove critical, where a deep understanding of medical complexities is crucial. All types of physicians are needed, from general practitioners to specialists, subspecialists, radiologists, occupational medicine, and more!

Generally, a case goes like this:

1. **Case evaluation** – review the case details
2. **Engagement agreement** – decide if you wish to take on the case, negotiate fees
3. **Medical records review** – more in-depth review of records
4. **Expert opinion** – based on your review, provide your formal opinion
5. **Deposition and testimony** – in some cases, potential need for deposition may be needed in a trial setting
6. **Billing** – provide an invoice for services provided, usually an hourly rate
7. **Confidentiality** – maintaining confidentiality during and after case involvement

So, how much can you make? I, at best, can provide a range of hourly rate values as reimbursement is based on your specialty, case complexity, geographic location, and market demand in your area. However, for strict chart review, rates average at \$150-500 an hour, and for larger cases, can go as high as \$1,000-\$2,000 per hour!

Are you looking to get started? Check out our more in-depth article, [Medical-Legal Consulting Is a Great Physician Side Gig](#). Following the button below to head to our affiliate's website, tell them The Motivated M.D. sent you!

3. Real Estate Investing

Are you looking for a physician side gig outside the medical field itself? Look no further. Despite real estate being a significant means of supplementing income, we have seen a surge of physicians looking to build an extensive real estate portfolio over the past decade. I suspect this is largely because physicians have the means of excess capital and can use this income to purchase properties that create cash flow and passive income that is nearly guaranteed.

Getting started with real estate investing can be daunting. For many physicians, doing anything outside of the medical field can be anxiety-provoking. What do we know about business management and real estate? Our lives have been decades of focused clinical education and practice; where does one begin? Please take a deep breath; no worries, I have some resources to help you get started.

First, real estate investing does not mean you purchase a property and then manage it yourself; most physicians likely don't have this kind of time. Here are just a few of the common avenues you can enter the real estate market:

- **Residential real estate** – purchasing single-family homes
- **Commercial real estate** – multi-family dwellings, triplexes, apartment complexes, office buildings, retail properties, shopping centers, strip malls, etc.
- **Real estate syndications** – this involves capital that is pooled from multiple investors to purchase more significant income-producing properties. It's an excellent avenue for physicians if you ask me.
- **Real estate investment trusts (REITs)** – REITs are publicly traded companies that own and manage various income-generating real estate properties. Offers liquidity, diversification, and potential for passive income through dividends.
- **Real estate crowdfunding** – Platforms that enable investors to contribute smaller amounts of money to fund real estate projects collectively. Examples include Fundrise and Crowdstreet.
- **Even more!**

Are you looking to learn more about real estate investing and the promise of financial prosperity it can bring? Check out [How Real Estate Investing Can Accelerate Physician FIRE Now](#).

Are you looking to build your real estate education before diving in? We have partnered with Semi-Retired MD who have created a phenomenal course called Zero to Freedom. Kenji and Leti are physicians who have built a real estate empire and slowly dialed back the clinical burden as their passive income has grown. They are living proof of what is capable when you build your real estate portfolio. Their course will teach you everything you need to know to purchase properties that will generate cash flow and help you accelerate your path to financial freedom. Check it out!

4. Moonlighting and Locum Tenens

The fourth spot on our list is moonlighting, and locum tenens work. What better way to produce more income than working more? I am only being half sarcastic here. I understand that in the post-pandemic world, inundated with physician burnout, it can be a tough sell to work more. However, some great opportunities exist for physicians either willing to work difficult hours or to relocate themselves briefly as leverage for substantial reimbursement.

Moonlighting and locum tenens work simply extends your current medical profession. For colleagues in my field unfamiliar with this concept, moonlighting is essentially 'extra' or 'overtime' work. For example, I am a board-certified pulmonologist, intensivist, and internist. While in fellowship training for pulmonary and critical care, I routinely worked as a nocturnist for supplemental income. Given that the hours of availability were nights and weekends, the hourly rate was high because these were often the shifts individuals did not wish to work. I was able to leverage this to pick up these less sought-after shifts to nearly double my fellowship salary each month.

Locum Tenens work takes this concept to the next level. Given our current physician shortage, physicians are constantly needed nationwide. Often, these needs may only be for a few weeks or months until a permanent position can be filled. Because of this, physicians have many opportunities to relocate to another city or state to work, often for significantly higher pay rates. For those wishing to work more or break out of their comfort zone and work elsewhere for a short time, phenomenally lucrative opportunities exist.

5. Create a Business

Last but certainly not least on this list is simply creating a business. After all my years of physician finance blogging, I have reached a relatively simple conclusion. Physicians make great income. If you are wise with your money, save, pay down your debts, and invest, you will likely live in the top 5% of household incomes nationwide. This is a great thing and still speaks volumes about the job security our profession offers.

However, if you are genuinely looking to create a life-changing revenue stream, money that can allow you to retire from medicine early or work on your terms, one of the last remaining ways is to *start your own business*. Be it an online business that offers consulting, a masterclass, or creating a device or an application. There are so many ways you can create and innovate. Building a business provides ownership to you, allows you to gain experience in business management, and creates an avenue for growth.

If you have an entrepreneurial spirit and have novel ideas, create a business around this idea and build a product that provides value to the world. People will happily hand over their money for a product or service that improves their day-to-day lives. These are the businesses that scale and can produce life-altering profit. Are you looking to build a physician-side gig empire? Build a business.

Are you looking for some inspiration? Check out the stories of Physician on FIRE, The White Coat Investor, Ali Abdaal, Semi-Retired MD, to name a few.

Take Home Points

Well, there you have it. This is my list of the top 5 Physician Side Gigs of 2024. Each new year brings new challenges and, ultimately, new opportunities for victory. If you want to supplement your income for whatever reason, check out the side gigs provided above. Don't stop at just one, either! Give some or all of them a try. Who knows which direction this journey will take you? Cheers! As always...

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2024 "Sure-To-Be-Wrong" Economic Predictions

by Derek Melvin, theinfinitygroup.com



With the year 2023 coming to an end, these next few weeks will be spent reflecting on the year that was and beginning to look ahead for what is in store for us in 2024. In the financial industry, you will begin seeing many articles come out with predictions for the economy in 2024.

Like this article you are about to read, nobody knows what will happen, so this is merely a fun exercise at predicting the future, which we know can be difficult, especially when we are talking about the economy. As are many years, 2023 is a great example of this. Despite domestic bank failures, a sharp rise in interest rates, conflict in multiple areas of the world, stingy inflation, among other items, the S&P 500 is currently positive over 20% year to date at the time this article was written. Of course, there are many positives that we have seen in the US economy in 2023 like decreasing inflation from highs in 2022, exciting AI technology innovations, strong labor market, etc., but that 20% positive figure may be a surprise to many. Almost any year when looking in hindsight you can find multiple surprises in the US economy, showing the difficulty in accurately predicting what will happen year in and year out. Therefore, like nearly all market predictions you will read going into 2024, these are sure to be wrong and it is simply a fun way to see how we do at the end of the year.

Prediction 1: Mortgage Rates will Decrease in 2024

With recent Consumer Price Index reports showing that inflation in the economy is slowing, we have reason to believe that interest rates may be coming down sooner than expected.

Inflation and interest rates are strongly linked. With steep inflation in the US economy following the Covid-19 pandemic, where many households had record high savings balances, the



Federal Reserve needed to raise interest rates to slow down spending. This has so far worked, with inflation continuing to trend down. When the Federal Reserve increases rates, this impacts interest rates you receive on your mortgage, auto loan, student loans, etc.

As inflation has cooled, that increases the likelihood that the Federal Reserve can slowly begin cutting interest rates, which would then allow mortgage rates to decline. This would be a welcome sight to many individuals looking to purchase a home in the coming years.

I would not expect rates to decline significantly, however. Despite the notion by many that we are in a severely high mortgage rate environment, with current average 30-year fixed mortgages around 8% at the time of this article, the 30 Year Mortgage Rate in the United States averaged 7.74% from 1971 until 2023. This shows that we may have gotten too used to very low mortgage rates (sub 5%) following the 2008 financial crisis and higher rates are to be expected moving forward.

Prediction 2: S&P 500 Hits Record High

My next prediction will have a bit to do with prediction number 1.

The economy loves lower interest rates. Companies and individuals alike can borrow money cheaper. For companies, this means they can reinvest more money back into their company or pay more money out to their shareholders. For individuals, that is more money to spend how they would like, investing for retirement, vacations, cars, etc. Both examples are good for the overall economy.



The record high for the S&P 500 occurred in January of 2022, reaching an intraday high of \$4,818.62. Currently, the S&P 500 sits at \$4,612.56. This means that an increase of 4.47% from current market values would reach all-time highs. I do not think this is far-fetched for the upcoming year.

Prediction 3: Consumer Spending will Tighten Early

Despite the hope of lower interest rates in 2024, which may allow for the consumer to free up some additional discretionary income, I feel consumer spending will be a vocal point of economic discussion in the early stages of 2024.

With federal student loan payments resuming for the first time in over 3 years, still relatively high prices on essential items such as food, gas, rent, etc., I expect spending to tighten for consumers, especially earlier in the year.



As inflation continues to make progress and interest rates to therefore decline, spending may pick up steam in the back half of the year, but I expect a sluggish start from the consumer.

Prediction 4: The Stock Market Will Go Up, And Down

As mentioned, these are only predictions, and the economy is very hard to predict.

This is one prediction I am confident will come true. The stock market will go up, and it will go down.

Volatility in the stock market is almost always present, which highlights the importance of having a plan and sticking to it.

A large majority of investors reading this are long-term investors, meaning that you are not expecting to pull from your retirement or investment accounts within the next 5 to even 40 years for some. In that time range, if history is any indicator of future results, I am very confident that a globally diversified investment portfolio will increase in value. I am not confident where the stock market will close today, tomorrow, or next month as the market can be very unpredictable.

With that said, being a disciplined investor through market dips and volatility is very important. That is, having a plan for your retirement and investment portfolio dollars and sticking to it.

Disclosures:

Please don't take anything in this post as an economic forecast, as we cannot predict the future with any certainty. Consult with your financial advisor before acting on any information. Any investment involves risk of loss, including total loss of principal. Being diversified does not insulate from potential losses.



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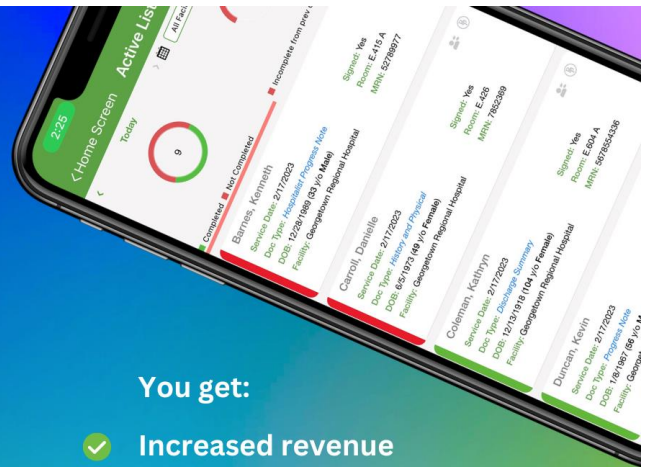
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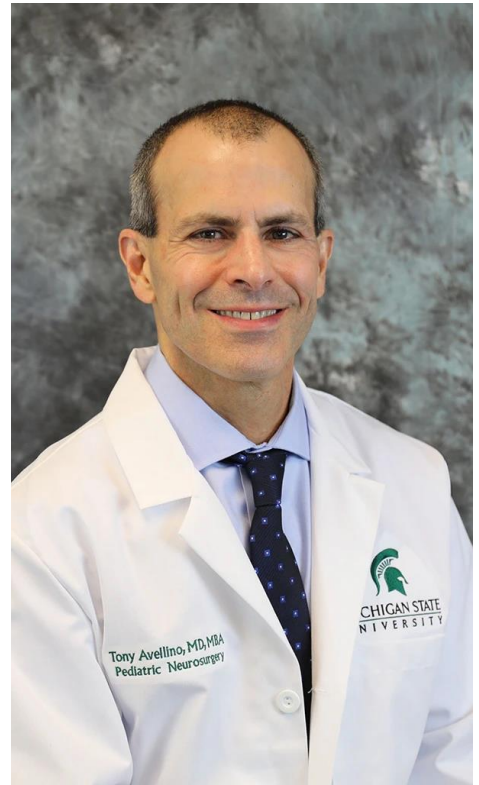
A Patient Reached Out to a Doctor and They Helped Each Other Heal

ANTHONY AVELLINO, MD,

“Each year, almost 400 physicians die by suicide.” That sentence stopped me in my tracks. I came across an article written by Dr. Avellino, with the opening line above.

One of my amazing doctors had died several months prior. I was, and in some ways still am, struggling with his death from over a year ago.

I clicked on Dr. Avellino’s website, immediately ordered his book, Finding Purpose: A Neurosurgeon’s Journey of Hope and Healing, read it cover to cover as soon as it arrived, and sent him an e-mail thanking him for writing it. I shared a brief summary of my recent medical trials, telling him I was devastated by the death of my phenomenal radiologist. I commented that I had already been concerned about physician well-being, and I so appreciated his willingness to be honest and vulnerable in sharing his story, it undoubtedly helps others, and chips away at reducing the stigma. I mentioned that I’d recently had struggles of my own in regards to acceptance, finding peace, and moving forward, and found that I too needed to be vulnerable and talk with trusted listeners for my own well-being. I sincerely wished him all the best.



Dr. Avellino sent a very kind reply and offered to chat! I felt incredibly honored and privileged that as busy as he is, he took the time to have a meaningful conversation with me. Among other things, we discovered that we attended college, different schools, in the same town, at the same time! He offered to support my efforts in addressing physician well-being within my local health care system in any way that he could.

Dr. Tony Avellino:

During our one-hour conversation, I was inspired by Kim’s compassion and commitment to help physicians heal. We discussed that physician well-being and their finding meaning in their work are essential to achieve the triple aim of providing improved quality care, improved patient experience, and lower costs!

Being a physician is an incredible responsibility that brings an enormous amount of joy, happiness, and self-worth. It also has a burden of incredible guilt when explaining the daunting task of moving on when a patient’s outcome is grim or terminal. The compounding trauma of dealing with uncertainty and not being able to do anything takes its toll over time when one has not developed healthy self-coping mechanisms. Thus, having healthy patient relationships is essential to my overall well-being. I’ve become a more compassionate and caring physician today having learned so much from my own patients. They have helped me heal more than they could ever realize. Kim is an exceptional patient who continually helps others listen to discover their purpose in life, to learn from their failures to overcome personal struggles and difficulties, and to heal to achieve a healthier and more purposeful life and find happiness. No one should ever hit rock bottom and be at the brink as we must remove the stigma so that those with mental health concerns seek help.

Kim Downey:

At the close of our conversation, I told Dr. Avellino I was so glad that he is okay; I felt it in my whole heart.

Over the following months, I periodically updated him on the things I was doing to promote physician well-being; he always responded with kindness, enthusiasm, and encouragement.

Dr. Avellino graciously agreed to be a recent guest on my new podcast supporting physicians. We talked about the power of true listening, being able to stay in the present moment, the importance of being a continuous learner and of pausing, and connecting at the heart. “We need more compassion and love in medicine, including for ourselves!”

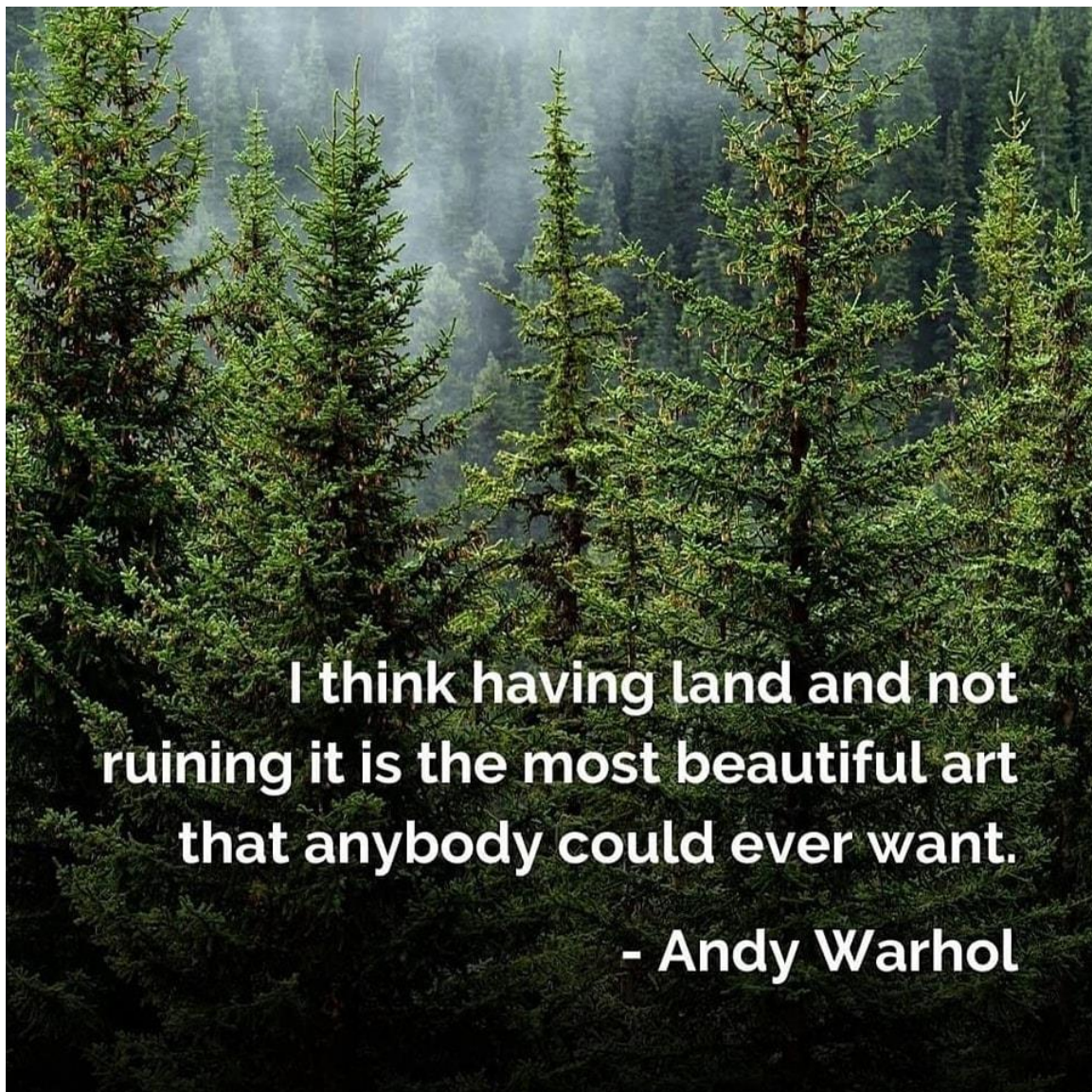
Feedback from Dr. Diana Londoño and Dr. Robert Kornfeld included an appreciation for surgeons speaking out and sharing ways to stay healthy not only in mind and body but in spirit as well. Also, gratitude for great doctors who share their story that will help and comfort many who feel alone and hopeless. Even the highly intelligent, highly trained among us are vulnerable to the challenges of being human!

Kim Downey and Dr. Tony Avellino:

Sometimes beautiful things can rise from the ashes of the saddest of things. We must all listen, learn, and heal with each other to achieve a healthier, peaceful, and purposeful life. We must remember we are never alone. And we must find hope, even in the darkest moments, for the lessons learned can give us insights on how to bring light to others.

We include the blessing of getting to know each other as one of those gifts. Thank you, as we appreciate each other!

Kim Downey is a physical therapist. Anthony Avellino is a pediatric neurosurgeon and the author of [Finding Purpose: A Neurosurgeon's Journey of Hope and Healing](#).



50 Easy Snacks for the Super Bowl

By Corey Williams

Planning your game day spread for the Super Bowl? We've got you covered with these simple and crowd-pleasing snacks and finger foods. Whether you're looking for tailgating classics (you can't go wrong with Amazing and Easy Chicken Wings, Sheet Pan Nachos, or Hot Artichoke Spinach Dip), bite-sized recipes everyone will love (Bacon Jalapeno Popper Puffs and three-ingredient Pigs in a Blanket won't last long on your table), or dietary restriction-friendly appetizers (Air Fryer Vegan Buffalo Tofu Bites are deliciously crispy), you'll find something for every football fan in this collection of easy snacks for the Super Bowl.

Fabulous Football Dip

Prep Time: 0 mins

Cook Time: 15 mins

Total Time: 15 mins

Servings: 16

Ingredients

- 1 pound sausage
- 1 (10 ounce) can diced tomatoes with green Chile peppers
- 2 (8 ounce) packages cream cheese, softened

Directions

1. In a large skillet, cook sausage over a medium heat until browned and cooked through.
2. Mix tomatoes and cream cheese into the skillet. Stir and continue cooking mixture over a medium heat until cheese has melted.



Amazing and Easy Chicken Wings

This is the best chicken wing recipe! It's surprisingly delicious considering how few ingredients are involved. I made it for the first time at a football party, and everyone ate all 5 pounds of wings within 10 minutes.

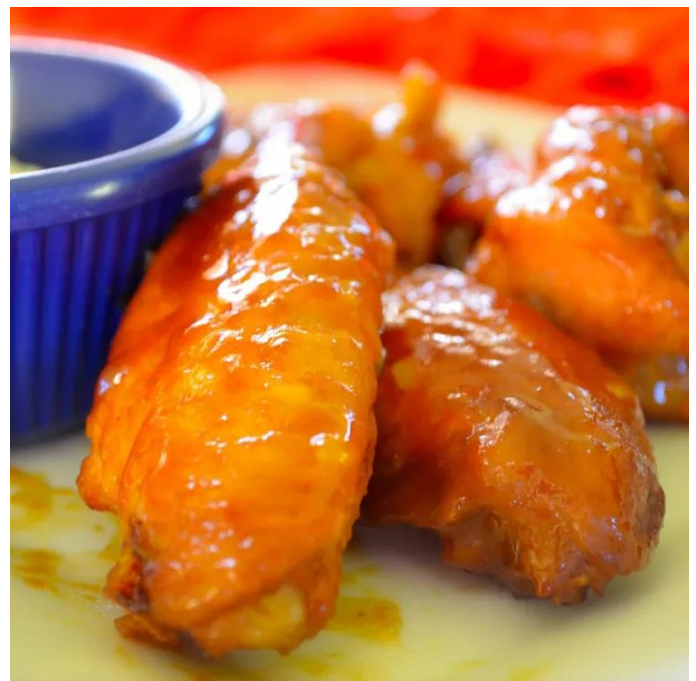
Prep Time: 15 mins

Cook Time: 1 hr

Additional Time: 2 hrs

Total Time: 3 hrs 15 mins

Servings: 10



Ingredients

- 2 cups brown sugar
- 1 cup yellow mustard
- ¼ cup soy sauce
- 5 pounds chicken wings, cut into thirds and tips discarded

Directions

1. Mix brown sugar, mustard, and soy sauce together in a bowl. Transfer 1/4 cup to a small bowl for basting; cover and refrigerate until needed.
2. Pour remaining marinade into a resealable bag. Add wings, coat with marinade, squeeze out excess air, and seal the bag. Marinate in the refrigerator for at least 2 hours, or overnight.
3. When ready to cook, preheat the oven to 375 degrees F (190 degrees C). Line a baking sheet with aluminum foil.
4. Remove wings from the marinade, shake off any excess, and transfer them to the prepared baking sheet. Discard the remaining marinade.
5. Bake in the preheated oven for 30 minutes. Baste wings with reserved marinade, then continue to cook, basting every 10 minutes, until chicken is no longer pink at the bone and the juices run clear, about 30 more minutes. An instant-read thermometer inserted near the bone should read at least 165 degrees F (74 degrees C).

Sausage Cheese Balls

Servings: 36

Yield: 6 dozen

Ingredients

- 2 pounds pork sausage
- 1 ½ cups buttermilk baking mix
- 16 ounces shredded Cheddar cheese
- ½ cup diced onion
- ½ cup chopped celery
- ½ teaspoon garlic powder

Directions

1. Preheat oven to 375 degrees F (190 degrees C).
2. Combine the sausage, baking mix, cheddar cheese, onion, celery and garlic powder. Mix well and form into 1 inch balls.
3. Place on ungreased cookie sheet 1/2 inch apart. Bake for 15 minutes or until golden brown.



Chicken Nachos with Refried Beans

Prep Time: 10 mins

Cook Time: 10 mins

Total Time: 20 mins

Servings: 8 servings

Ingredients

- 1 (14.5 ounce) package tortilla chips
- 1 (16 ounce) can refried beans
- 2 cooked skinless, boneless chicken breast halves, cut into bite-sized pieces
- 1 cup canned jalapeno pepper slices
- 12 ounces shredded Cheddar cheese



Directions

1. Preheat the oven to 350 degrees F (175 degrees C). Line a large rimmed baking sheet with parchment paper.
2. Pour tortilla chips onto the prepared baking sheet. Spread refried beans over the chips. Layer on chicken and jalapenos. Top with Cheddar cheese.
3. Bake in the preheated oven until cheese is melted and bubbly, about 6 minutes.

Cook's Note:

We have used different types of meat (taco meat, beef fajitas, crawfish, etc.) and they are all wonderful combinations.

Date Goat Cheese Basil Bites

Prep Time: 25 mins

Cook Time: 15 mins

Additional Time: 20 mins

Total Time: 1 hr

Servings: 20

Ingredients

- 1 (8 ounce) package goat cheese, slightly softened



- 1 ½ tablespoons honey
- 3 tablespoons chopped fresh basil
- 1 pound pitted dates
- ⅓ pound thinly sliced prosciutto
- toothpicks

Directions

1. Mix goat cheese, honey, and basil together in a bowl until smooth and creamy; refrigerate for 20 minutes.
2. Preheat toaster oven or oven to 400 degrees F (200 degrees C).
3. Fill dates with goat cheese filling using a small spoon. Wrap each date with enough prosciutto to cover entire date and secure with a toothpick. Arrange on a baking sheet.
4. Bake in the preheated toaster oven until prosciutto becomes crisp and caramelized, about 10 minutes. Flip each date and continue baking until crisp on top, about 5 more minutes.

Bacon-Wrapped Smokies

Prep Time: 20 mins

Cook Time: 40 mins

Total Time: 1 hr

Servings: 16

"I made these for a weekly get together with friends and was requested, nay DEMANDED to make these two days later for another party," says recipe creator Kari Doll. "WONDERFUL, EASY appetizer!"

These sweet and salty bacon-wrapped smokies are a quick and easy party appetizer. Serve them straight from the oven or keep them warm in a slow cooker until the big game starts. Assembling these smoky bacon wraps may take some time, but it's well worth it!

What You'll Need

You'll need just three edible ingredients (plus some toothpicks) to make this bacon-wrapped smokies recipe:

- Bacon: This bacon-wrapped smokies recipe starts with a pound of bacon strips, cut into thirds.
- Cocktail wieners: You'll need a package of beef cocktail wieners, which can be found in the refrigerator section of your grocery store.



- Toothpicks: A toothpick secures the bacon to the wieners so the smokies stay together during the baking process.
- Brown sugar: Brown sugar lends warmth and welcome sweetness.

How to Make Bacon-Wrapped Smokies

You'll find the full, step-by-step recipe below — but here's a brief overview of what you can expect when you make these crowd-pleasing bacon-wrapped smokies:

Wrap each wiener in bacon, secure with a toothpick, and sprinkle with brown sugar. Bake until the bacon is crisp and the sugar is bubbling.

Cook's Note

Keep some of the bacon refrigerated as you wrap the wieners. It's much easier to wrap them with cold bacon!

How to Serve Bacon-Wrapped Smokies

Pair these sweet smokies with a savory dipping sauce for the perfect balance of flavor. Try this Copycat Dipping Sauce or make Homemade Ranch to keep things classic.

Ingredients

- 1 pound sliced bacon, cut into thirds
- 1 (14 ounce) package beef cocktail wieners
- toothpicks
- ¾ cup brown sugar, or to taste

Directions

1. Gather all ingredients.
2. Preheat the oven to 325 degrees F (165 degrees C). Line a large, rimmed baking sheet with parchment paper or aluminum foil.
3. Wrap each cocktail wiener with a piece of bacon; secure with a toothpick. Place bacon-wrapped wieners on the prepared baking sheet.
4. Evenly sprinkle brown sugar over the tops of the bacon-wrapped wieners.
5. Bake in the preheated oven until bacon is crisp and sugar is bubbly, about 40 minutes.
6. Serve immediately, or place in a slow cooker set on Low to keep warm.



Sometimes I meet
people and feel bad
for their dog

Senior Health Care Leaders: This is What a Psychopath Looks Like - Please Fire Them

DIKE DRUMMOND, MD

How do you spot a “psychopath” inside a complex bureaucracy?

It is a consistent feature of bureaucracy. Psychopath doctors and senior leaders almost never get walked out of the building despite years of complaints and truly outrageous behavior. When they finally are fired or brought to justice, just a small amount of digging reveals National-Enquirer-headline-style shenanigans.

Here is the latest in the health care industry press: [“Prominent Johns Hopkins physician on leave amid misdiagnosis, bullying claims.”](#)

You can read the details. They will sound familiar.

Multiple comments by pathology physicians and residents stating they did not feel comfortable speaking up regarding “intimidation” or “bullying” behavior by a department leader, indicating they were forced to change diagnoses, issue addendums, and defer to the leader’s wishes over several years, thereby potentially leading to harm to patients.

This is a complete failure of leadership.

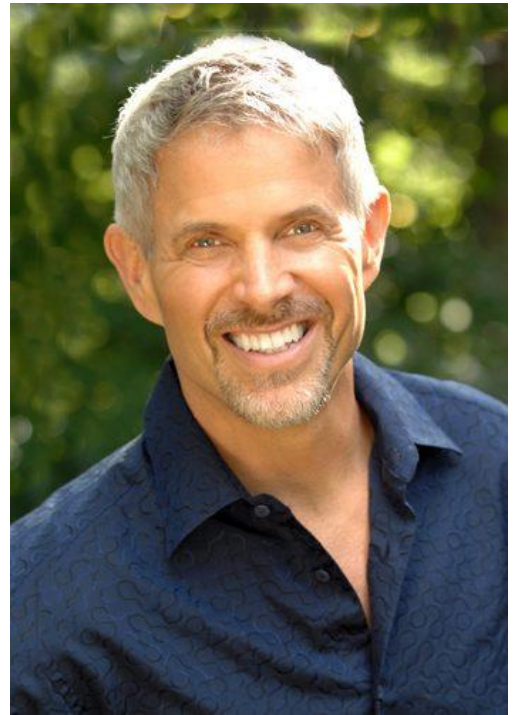
They failed to take appropriate actions at any point in a multiple-year history of suspicious, self-serving, and dangerous verbal tirades and actions – all occurring in a health care workplace.

Failing to take action when the code of conduct is broken harms patients, destroys the workplace culture, and burns out doctors and staff.

In our physician burnout coaching practice, one in three doctors must quit their current job and find a new one to recover from burnout. The majority of those job searches are triggered by a psychopath boss.

Early in my coaching career, I worked hard with about six clients in a row, searching for a strategy to dislodge the psychopath – rather than let their behavior chase me out of their job. We agreed on this “one last try” approach. Across those six coaching relationships, we tried a number of different strategic approaches. In each case, we kept at it for 3 to 6 months.

Our success record was perfect — 0 for 6. An unblemished record of failure.



I take that back. We did finally motivate one organization to fire one psychopath for violations of the bylaws and code of ethics. However, my client's reputation was so tarnished by the effort that she had to leave shortly afterward.

How does this happen?

How does the psychopath manage to defy organizational gravity? There are situations where you witness them do or say something you know you would be fired for, and they get a promotion the next week.

The psychopath superpower

Psychopaths are able to kiss up and piss down the organizational chart with extreme effectiveness. They cultivate sycophant relationships with one or two senior leaders while they target just a small number of people beneath them down the chain of command for their abusive behavior.

If you are a senior leader, here is your red flag:

Whenever anyone comes to you and says, "Dr. X is making my life a living hell, or asking me to do something illegal or immoral," your instinct is to question that statement. Your inner or outer voice may say something like, "Dr. X? What are you talking about? Dr. X is awesome. There must be some mistake."

When the complaints are outrageous (like the story at the top of this article) and you immediately deny them without investigating because "Dr. X isn't that kind of guy."

There is a very high likelihood you have been groomed by Dr. X, and they are a true psychopath. You are the one this person kisses up to, and he is a very good kisser-upper.

Investigate that complaint fully.

Talk to anyone who was a witness.

Consider doing a 360 survey of Dr. X's leadership and communication skills.

Here's the kicker: If our psychopath Dr. X is also a top producer and a big money maker for your institution, and your instinct is to defend them because of their contribution to the profit and loss statement rather than prosecute the behavior, you may be a bit of a psychopath too.

Dike Drummond is a Mayo-trained family practice physician, burnout survivor, executive coach, consultant, and founder of TheHappyMD.com. He teaches simple methods to help individual physicians and organizations recognize and prevent physician burnout. These tools were discovered and tested through Dr. Drummond's 3,000+ hours of physician coaching experience. Since 2010, he has also delivered physician wellness training to over 40,000 doctors on behalf of 175 corporate and association clients on four continents. His current work is focused on the 7 Habits of Physician Wellbeing. Dr. Drummond has also trained 250 Physician Wellness Champions, and his Quadruple Aim Blueprint Corporate Physician Wellness Strategy is designed to launch all five components in a single onsite day. He can also be reached on [Facebook](#), X [@dikedrummond](#), and on his podcast, [ians on Purpose](#).

A Las Vegas Survival Guide: The Dos and Don'ts of Sin City

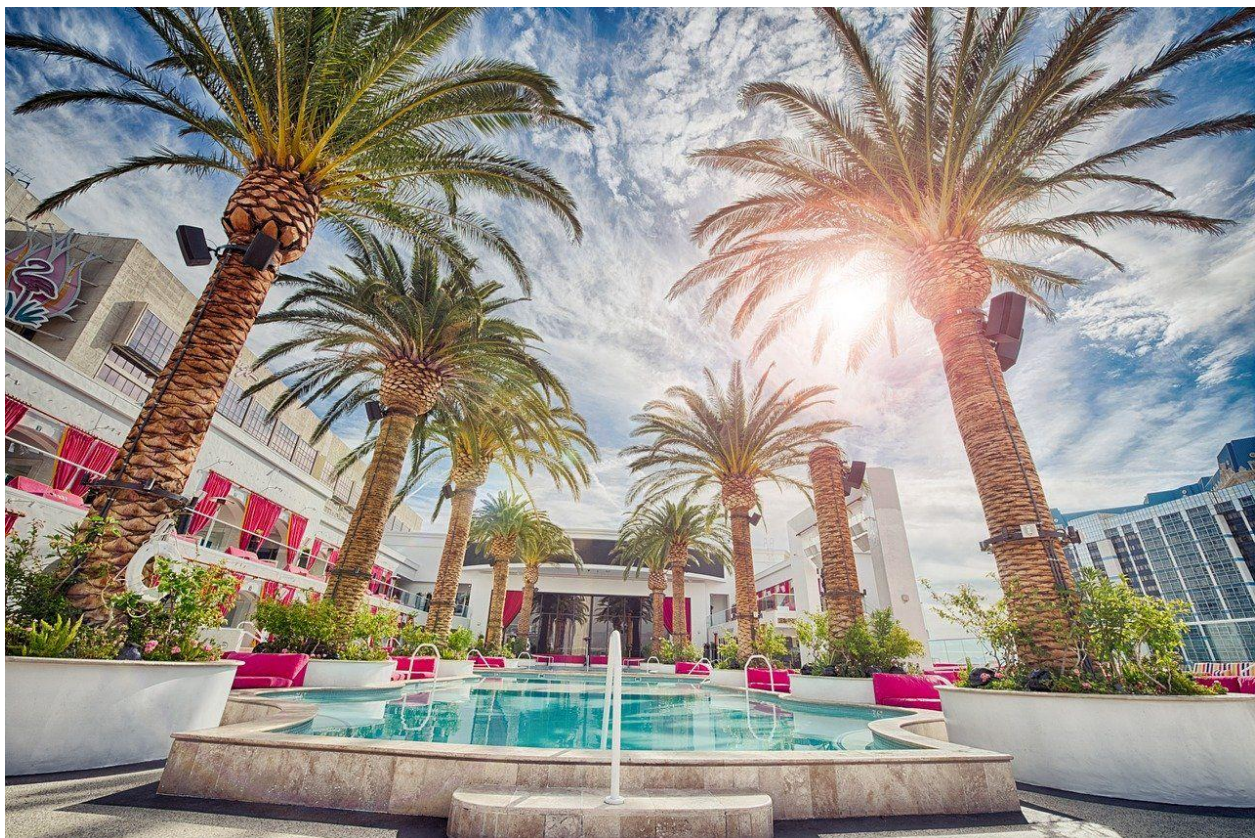
By Eleanor Aldridge

Few destinations can match the unbridled hedonism of [Las Vegas](#). Nevada's pulsating desert city, a tangle of neon-lit casinos and roaring freeways, is one of the most unforgettable places on Earth. If you get it right, a weekend in this town can be the trip of a lifetime. If you don't, Vegas can easily overwhelm and disappoint – not to mention empty your wallet. Here are our tips for making the most of the city.

Do take time to find the right hotel

The first step is choosing the right place to stay, and in Vegas the options are almost limitless. Start by thinking about what you want to get out of your trip. Which casinos and sights do you want to be near? How important for you is it to stay in one of big names? How far can you really afford to stretch your budget?

The city's hotels run the gamut from slightly seedy to ridiculously extravagant, with a bewildering array of deals to draw you in. At the upper end of the scale, lavish mega-casinos such as the Venetian and Bellagio spoil you rotten with luxury facilities, shops and restaurants. More affordable are lovably kitsch stalwarts including Luxor and New York–New York, as well as modern casinos such as the Linq, where chic rooms make up for a lack of big-name attractions.



Don't spend your whole trip on the Strip

With a slew of things to do on your doorstep, it's easy not to leave your hotel – let alone break away from [the Strip](#). Make sure you venture further at least once, whether it's to see a show at an off-Strip casino like the Rio

or Hard Rock, or to indulge in one of the city's more ridiculous attractions – try glow-in-the-dark, [KISS-themed Monster Mini Golf](#) for starters.

Fremont Street is one of the best places to head for a full day out. Comprising four covered blocks, this redeveloped corner of Downtown houses some pleasingly gritty casinos and an awesome indoor zipline, Slotzilla.

Do blow your budget on a buffet brunch

Where else in the world can you pick from hundreds of dishes and wash them down with limitless mimosas? Vegas does all-you-can-eat buffets like no other city, with highlights ranging from fresh seafood and dim sum to made-to-order pancakes and indulgent dessert bars. Buy the [Pocket Rough Guide to Las Vegas](#) for reviews of all the best, including Caesars' legendary Bacchanal Buffet.



Don't expect to go to bed early

Even if you're not here to hit the clubs, don't expect to make it back to your room before the early hours. This is a city that really doesn't sleep – and if the bars don't tempt you in, the artificial light will have you convinced it's barely past sundown. The Forum shops even have a false-sky ceiling that alternates hourly between day and night.

Do embrace the weird and wonderful

Take a ride in a Venetian gondola on the second-floor of the eponymous casino. Zip through the Manhattan skyline on New York–New York's famous rollercoaster. Watch a volcano erupt at the Mirage. See "Elvis" in action in one of the Strip's late-night bars. It's these over-the-top experiences that you'll remember long after your visit.

Don't miss out on the shows

Vegas shows are simply some of the world's best. Tickets might be pricey, but seeing at least one is well worth it, whether you want to be awed by Penn and Teller's magic tricks, catch the inimitable Cirque du Soleil in action or dance the night away with Britney.

Do get high

No, not that kind of high. Vegas is best seen from above, and there are plenty of places from where you can take in the view. If your budget won't stretch to a helicopter tour, hop into a capsule on the High Roller ferris wheel or head to the observation deck at the Stratosphere, the tallest building in the city.



Do set yourself a gambling budget

If you choose to gamble – not everyone does – set yourself a budget. Drinks are on the house while you're at the tables, and a couple of margaritas can quickly lead to spending more than you intended.

Don't rent a car

Free drinks and driving do not mix – just don't do it. Not only is the Strip generally safe and walkable (this is, after all, the city that installed escalators over intersections), but you'll rarely need to wait more than a few minutes for an Uber or a cab.



Do get outside

The hotels do their best to keep you indoors, spiriting you between casino floors and shopping arcades via a bewildering network of corridors and walkways. Break out once in awhile, whether it's to eat a cafe-style breakfast beneath the Eiffel Tower in front of Paris Las Vegas or watch the Bellagio fountains perform their impressive display.

Don't just visit in summer

Pool parties and palm trees might be quintessential Las Vegas, but there are plenty of reasons to visit in winter – not least the bearable temperatures. New Year is, unsurprisingly, a party like no other, while Christmas sees lights, festive shows and ice-rinks pop up across town.

Don't leave without taking a day-trip

Most people find around three consecutive days in Las Vegas is enough. More than that and you'll start to become overwhelmed by the constant onslaught of sound, activity and colour. It would be a shame, however, to leave your trip at that; some of the Southwest's most epic landscapes are just a short journey away.

Daily tours run to Red Rock Canyon, the Hoover Dam, Valley of the Fire and the Skywalk at Grand Canyon West. If you've got a night or two to spare, you can reach the more remote [Grand Canyon South Rim](#), glorious [Zion National Park](#) or [Bryce Canyon](#)'s fascinating hoodoos.



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What Will Blood Testing Look Like In The Near Future?

Blood tests will remain fundamental for the diagnostic work, but parts of the process will change in the next 5-10 years.

By **Andrea Koncz**

Key Takeaways

The future of blood testing is likely to see a significant shift from traditional healthcare facilities to at-home testing, offering greater convenience and reducing the need for physical visits to healthcare providers.

The process of blood drawing is evolving rapidly with technologies like DIY blood draw kits and blood-drawing robots, which promise to make the procedure more efficient while reducing the workload on medical staff.

The interpretation of lab results is set to become more accessible and comprehensible, with AI algorithms providing analysis services directly to patients and lab service providers, thus demystifying medical data and aiding in faster decision-making.

The traditional process of blood draw is familiar to everyone. It typically involves visiting a healthcare facility where a professional, such as a nurse or phlebotomist, draws the blood. Patients then wait for results that are often challenging for non-professionals to interpret.

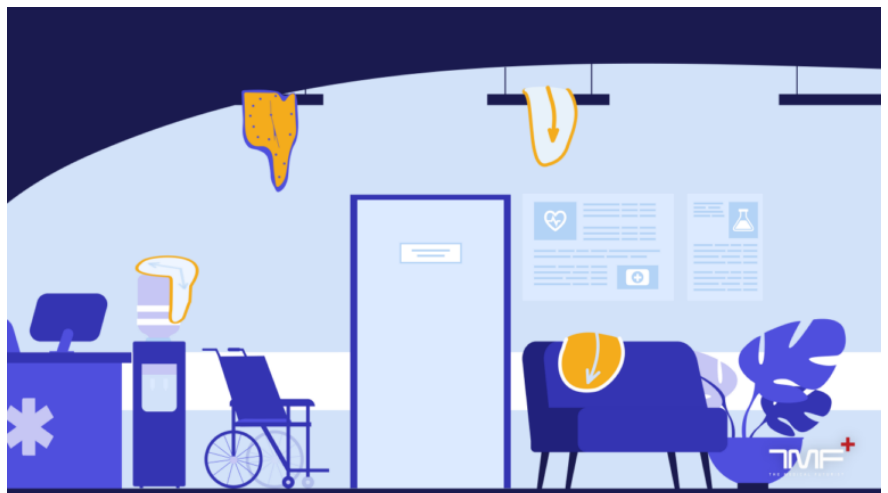
This analysis aims to explore how this universally recognized procedure has evolved recently and how it is expected to change in the next 5-10 years, especially in the context of digital health.

Initially, blood draw was a purely manual process, requiring skilled professionals for both the drawing and the analysis. The procedure and equipment were standard, and the interpretation of results was limited to laboratory professionals. Let's take a look at each element of the traditional process and see if/how it changes.

1. Going to the point of care facility

Traditionally, the journey of blood testing begins with a trip to a point of care (POC) facility. This step, once considered indispensable, is undergoing a significant transformation due to the [rise of at-home lab tests](#).

At-home lab tests represent a paradigm shift in the way blood testing is conducted. Initially, the idea of conducting complex tests outside of a professional healthcare setting was met with skepticism. The shift has been accelerated by various factors, including the COVID-19 pandemic, when the need for social distancing and minimizing exposure to healthcare facilities supported alternative solutions. However, this trend is not a temporary response to the pandemic but a long-term shift in patient preferences and healthcare practices.



As we move forward, the role of POC facilities is likely to evolve. While they will remain crucial for more complex procedures and tests, and for every case that requires large sample sizes, the rise of at-home lab tests [suggests a future](#) where many standard blood tests can be conducted without the need for a physical visit to a healthcare provider.

2. The blood draw process

The actual step of drawing a blood sample is currently undergoing significant changes in two ways.

DIY blood draws

Firstly, thanks to DIY blood draw kits, patients can now take blood samples at home in just a few minutes. We've previously discussed this, you can [read about the technology in detail here](#). DIY blood draw takes between 5-15 minutes to complete, you can wake up and finish the process by the time your toast and cappuccino are ready.

The trustworthy initiatives we've seen involve collecting capillary blood from the upper arm using a vacuum. After preparation, the device is attached to the arm, a button is pressed, creating a vacuum, and microneedles/a tiny lancet pricks the skin. In a few minutes, your sample is ready. These devices can collect liquid and dried samples. I tried it and [created a short video](#) about the process.

While this method doesn't reduce the time taken for sampling, it eliminates the need for travel and waiting times. Although not a complete solution for all scenarios, this method has its merits.

The pandemic has shown that avoiding contact with large groups of patients can be prudent. Moreover, home sampling offers an efficient and convenient method for clinical trials, encouraging patient participation. It is becoming a widely used method for collecting samples for DNA tests, replacing saliva samples, and cheek swabs, with Dante being the first to use dried blood, showing that these small samples are sufficient for their purposes.

Blood drawing robots arrived

The second major game-changer in the process is [the arrival of blood-drawing robots](#). We will meet them at the traditional point-of-care locations, so the setting remains the same with them, but the role of human staff is changing.

Robots could potentially draw blood more efficiently than humans, freeing up time for medical staff. However, people often prefer human interaction.

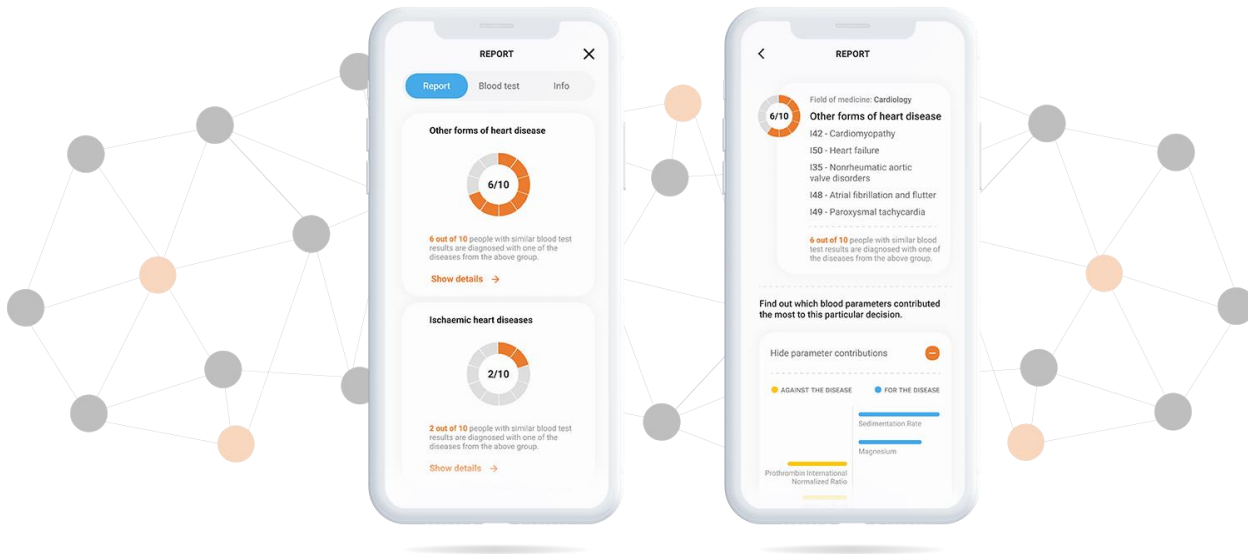
The potential advantages are obvious: the robot doesn't just guess where the vein is – it actually sees it. Its hands never shake, it never gets tired, and it frees up valuable nurse time. Nurses would still be present to provide empathy and support, but the burden of the technical procedure is not on them. Automation also adds a level of safety for the patient.

A few years ago, we wrote about Veebot, a robot capable of drawing blood quickly and effectively. Since then, the concept has become a reality. In 2022, Vitestro announced their 'Autonomous blood drawing device', which has performed 1500 blood draws on over 1000 patients. They have started a [large-scale clinical trial](#) involving 10,000 patients, expected to last two years, with plans to obtain CE marking by the end of 2024.

3. Analysis and intelligent reporting

There are numerous new initiatives in this area, and for good reason. Lab reports, filled with abbreviations, are often incomprehensible to the average patient. Moreover, especially in cases requiring specialists, it can be a lengthy process to reach a doctor and receive their expert opinion. Consequently, it's not surprising that many initiatives have emerged aiming to make the interpretation of lab results easier and faster.

To this end, some have developed AI algorithms to provide analysis services [directly](#) to [patients](#): you can input your lab results and receive an evaluation. There are also [AI algorithms](#) offered to lab service providers, which they can integrate into their own product offerings, thus aiding in the analysis of test results for their patients.



Furthermore, we can utilise generative AI algorithms, like ChatGPT. While officially such models are not approved for medical use and cannot be recommended for this purpose, they often help uncover valuable insights. This patient with thyroid issues describes (written very likely with ChatGPT) [how they used ChatGPT](#) when they couldn't reach their specialist to help interpret their lab values.

To sum up

To sum up, we will see changes in several segments of the trusted old process of blood testing:

for tests requiring smaller sample sizes (such as allergies, food intolerances, DNA, microbiome), maintaining a point-of-care facility will become unnecessary, as patients will provide samples from home

The era of incomprehensible lab results is over, as various AI algorithms will help anyone interpret the results

Laboratories won't disappear, but their roles will change.

Point-of-care blood draws, over time, are expected to be increasingly performed by robots, freeing up human staff for other tasks

“Education isn't something you can finish.”

— Isaac Asimov

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Apple Vision Pro Review: A Mind-Blowing Look at an Unfinished Future

Scott Stein, CNET.COM

A personal cinema? A wearable iPad? A doorway to immersive futures? This is Apple's wildest and strangest device.



PROS

- Amazing micro-OLED display
- A mostly fluid hand-eye control interface
- Blends the real and virtual worlds impressively
- iOS support folds in tons of familiar apps for work
- Playing back personal 3D memories feels transporting

CONS

- Extremely expensive
- Hand-eye interface isn't always perfect
- Not many VisionOS optimized apps yet
- External battery and cord required for use
- Doesn't work over glasses

It's easy to lose track of where I am when I'm wearing the Vision Pro. And it's thrilling.

I'm on a FaceTime call with a colleague in San Francisco. I see her in 3D in front of my face, part of a sweeping landscape of apps and images laid out in front of me -- like an iPad exploded into space. After our call, I hang up and, with the headset still on, turn a dial to draw back the virtual landscape, revealing the reality outside the Vision Pro: CNET's video team all around me to capture the experience. Worlds within worlds within worlds.

I've dreamed of the future in VR and AR headsets for years: [Oculus](#), [Magic Leap](#), [HoloLens](#) and countless others. But living in the Vision Pro for the past week has been one of the most complex experiences of all. It's one of the hardest products I've ever had to evaluate. Parts of it are stunning. Others don't feel entirely finished. It's unbelievably expensive (\$3,499 and up, and only in the US for now), but also full of futuristic parts at every turn. Did I mention my eyes animate on the outside of the headset's glass for everyone to see, like half-submerged, half-virtual parts of myself?



Apple's big bet on the immersive future is also a big step into a new phase of devices that intertwine with the software we already use on our phones, tablets and computers. The Vision Pro runs on a new operating system, VisionOS, but it's still essentially an iOS computer inside a mixed reality VR headset, with the benefits and design challenges of each but elevated with a whole bunch of new features and ideas.

The headset is the best wearable display I've ever put on. But at its price, and with so few VisionOS apps at launch, the Vision Pro isn't a device I'd recommend to any of my friends or family. If you're in the immersive industry and can afford one, then that's another story. But for anyone else, I'd recommend you get a free demo at an Apple Store, marvel at its features and wait and see. That said, I can't stop thinking about it. Also, I wrote most of this review in it. I'm still inside.



What it does that's different than the Quest and everything else

There is a class of VR headsets capable of mixed reality that passes video which is captured with cameras on the outside to displays on the inside. Meta's [Quest Pro](#) and [Quest 3](#) have mixed-reality functions, and so do the [HTC Vive XR Elite](#) and Varjo's [high-end PC VR headsets](#). Apple's Vision Pro is the most advanced blend of mixed reality in a standalone device that I've ever experienced.

The Vision Pro is studded with cameras and sensors: Multiple cameras on the outside, a [lidar](#) sensor and TrueDepth camera (which the iPhone uses for front-facing cameras and Face ID scans), infrared sensors and more cameras underneath, and extra eye-tracking cameras and sensors on the inside. There are no controllers; every interaction is done with your eyes and hands, or via speaking to Siri using the built-in microphones. Hand and eye tracking even works in the dark -- light is needed for room tracking, but not for hand tracking. Lying in bed one night, I watched movies on my bedroom ceiling.

Although the Vision Pro has its own apps, [it runs many iOS apps, too](#). It's hooked into iCloud as well as Apple services like iTunes, Apple TV Plus and Arcade. There's an M2 chip inside, which equates to roughly the same processor in the [13-inch MacBook Air](#), or the last [iPad Pro models](#).

The display quality and the finessed interface make the Vision Pro feel like it's in a whole other class, though. The dual 4K [micro-OLED](#) displays, a technology that will make its way to other headsets in the future, are rich, vibrant and way above what competing devices offer. Apple's hand and eye tracking is always on, and often fantastic (but not always). Also, the Vision Pro requires no room setup at all. The depth mapping and spatial awareness happen invisibly, something I haven't seen before either.



The Vision Pro's look feels iconic, but that battery and cord is something to consider.
Josh Goldman/CNET

iPhone meets Ready Player One

As my colleague Bridget Carey said, the Vision Pro looks like an iPhone merged with a Meta Quest. The outer part of the Vision Pro, all the processing and outer displays, has the aluminum and glass contours of an iPhone, but the top buttons -- including a large rotating digital crown and a flat clickable button for Apple Pay and camera capture -- are like an Apple Watch. It feels dense and I want to protect it from damage.

The headset's required "light shield" and cushions resemble the spacers on VR headsets like the Quest, but they attach far more easily, magnetically snapping on and off. The side arms of the Vision Pro are where the speakers live, in bubblelike buds that project down to a wearer's ears like the Quest. The head straps snap on easily and are removed via a little tug on orange fabric pull tabs. It's a sleek design that has surprisingly comfy materials.



No shortage of accessories that come in the box.

What's in the box?

The Vision Pro's box is big, but the Vision Pro itself is pretty small, about the same size as a Meta Quest 3. It's heavy, though (approximately 1.3 pounds, and that's not including the battery pack, compared to the roughly 1.1-pound Quest 3). The box is filled with accessories:

- Two head straps for different fits.
- An extra face cushion (one's a bit thicker than the other, for those wearing prescription lenses).
- A proprietary battery with a cable.
- A cushioned front-cover cozy for the headset's glass front.
- A USB-C 30-watt charging adapter.
- A USB-C cable.
- An Apple polishing cloth (which Apple says should be the only cloth you use to polish the Vision Pro, but microfiber cloths should be fine).
- And... an instruction manual.

Apple doesn't usually do instruction manuals, but the booklet is a guide to attaching the battery, adjusting the fit and operating the headset. It's a sign that setting up and navigating this spatial computer is a whole new universe, and not always intuitive.



I need Zeiss inserts.
Josh Goldman/CNET

My eyes and Vision Pro

Unlike many VR headsets, Apple's Vision Pro doesn't work with glasses at all. That's a trend I've seen coming for years, and it's upsetting. Instead, Apple requires prescription lens inserts, made by Zeiss, that cost anywhere from \$99 to \$149. I got outfitted for a pair that corrected even my severe nearsightedness (-8.50 in one eye), although I've heard of some people who don't meet the prescription cutoffs.

Meta and other headset manufacturers also have prescription insert options -- I've been using a pair of lenses with the Quest 3, made by Zenni -- but most other VR headsets also have spacers that allow the wearer to wear glasses, too. The Meta Quest Pro, for instance, allows glasses.

The Zeiss lenses come in a cardboard sleeve, along with a QR code card for setup. Scan the code with the headset's cameras and the device optimizes the displays for the lenses. The lenses snap in magnetically, and they're easy to pop on and off.



The battery pack is a weird part, necessary and hard to store.

Josh Goldman/CNET

My first dive: Spatial computer = facial computer

There are parts of the Vision Pro that feel like any other Apple device, and parts that decidedly do not. First I needed to adjust my head straps. The preattached Solo Knit headband feels like a padded ski goggle head strap, stretching around the back of my head and tightening with a knob on the side. It's comfy at first, but after half an hour the headset feels top-heavy and pushes in on my cheeks a bit. It's fine for short sessions, though. The other head strap is a Dual Loop band that looks like the headband on my CPAP machine and tightens on the back and over the top of my head with Velcro. The weight balance is better; this is a better fit for long work sessions.

The battery cable to the Vision Pro is odd -- it's a locking, unique circular attachment that needs to be slotted in at an angle and then turned to lock in place. It's to prevent losing power when using Vision Pro, but it also means you can't use a regular USB-C cable to power up or charge the headset unless you route it through the Vision Pro's large, heavy battery, which weighs about 0.75 pounds. I just put the battery beside me, and sometimes tuck it in my pocket. The fabric-covered cord to the battery, which isn't removable, is long enough to tuck nearby but not long enough to snake across a room.

Like an iPad or Mac, you can bring your iPhone near to the Vision Pro to start setting it up, and it copies your account over easily. Familiar opt-ins are offered: Apple Pay, location services and sharing data with

Apple. Others are less familiar: An eye-tracking setup, like a video game, has you stare at a ring of colored dots and tap your fingers to click on each one. The headset has me stretch my hands out to scan them. Then there's Persona setup, which scans your face into an uncanny avatar for FaceTime, and also puts your eyes on the front of the headset. Welcome to the weirdness (you can skip Persona setup till later, though).

But once that's done, a recognizable grid of apps appears. A lot of VisionOS feels familiar, by design.

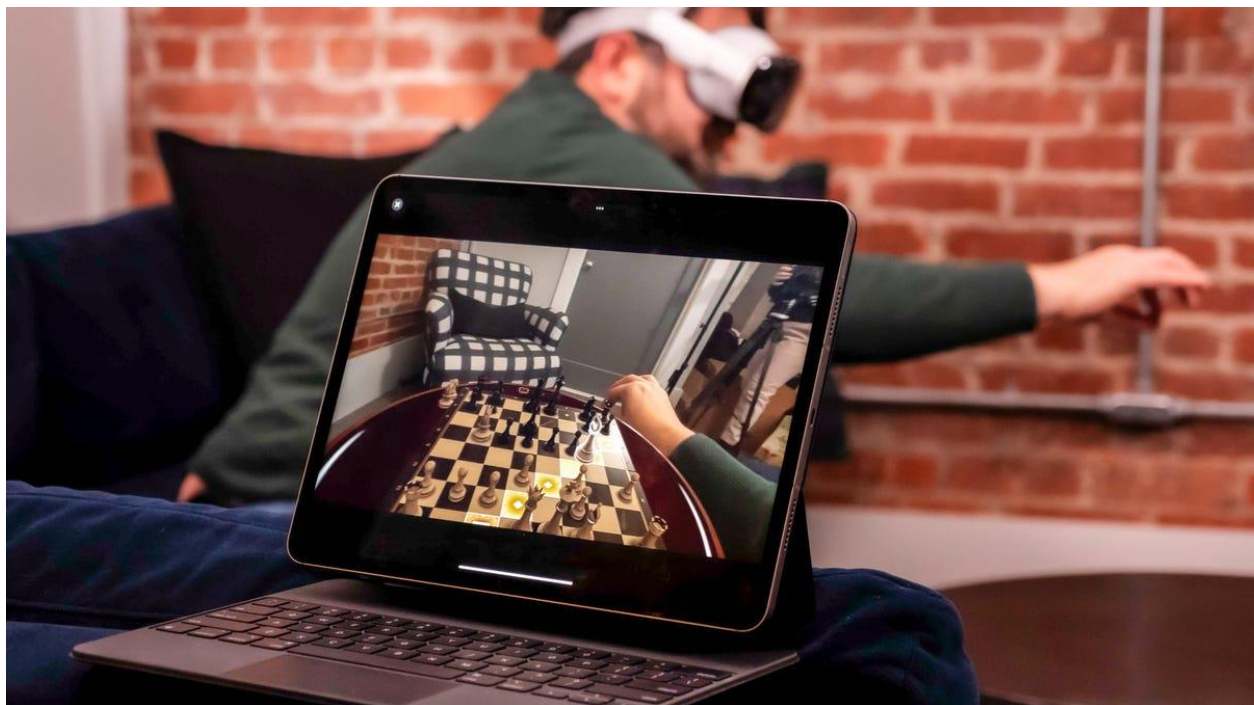
VisionOS: Where it is and isn't iOS

Apple's iOS-based mixed reality OS is its unique software advantage versus any other VR/AR headset out there, and it immediately shows. Once my iCloud account is added, all my hundreds of thousands of emails are there. There are my photos, my notes, my documents, my Safari bookmarks.

An app grid pops up when you press the digital crown, similar to an Apple Watch, but opening apps brings up resizable windows like an iPad in multiwindowed Stage Manager mode. Apps can be placed anywhere, resized and dragged forward or back in space.

That's also true for 3D apps, for the most part: I could wildly layer 3D games What The Golf, Cut the Rope 3 and Puzzling Places side by side, while also watching sports. The apps overlap and ghost over each other, but each one only activates when you look at it and tap your fingers. It can get confusing, but the possibilities of simultaneous work are fascinating.

Controls take getting used to. Any icon or button I look at is highlighted, grows in size or glows, and tapping my fingers selects it. It's jarring at first, but intuitive.



Controls in Vision Pro, like moving a chess piece, include hand gestures.

Josh Goldman/CNET

Control Center, a pull-down menu on iPhones, is a hovering dot that floats above my field of view. It becomes an arrow when I stare at it, then expands into familiar controls for Wi-Fi, Bluetooth and screen recording, which has been super helpful for this review. That Control Center dot can be shifted higher up in settings but sometimes gets in the way when watching movies or playing immersive games.

There are some missing settings I'm used to in iOS that aren't in VisionOS (no Screen Time settings, for instance), and there's no FaceTime app. Instead, in the main app grid, there's a toggle for People where contacts can be pulled up and FaceTime calls started. The Messages app lets me respond to people, including green bubbles.

AirDrop is here, and it works as easily as on iOS. So is the Files app, so I can upload things through a phone or iPad or Mac and pull them up here, or vice versa. It's really easy to hop back and forth between devices -- or a lot easier than on something like a Meta Quest.



The digital crown on the Vision Pro dials reality in or out, with levels in-between.

Josh Goldman/CNET

Blending reality -- or shutting it out completely

Apple's mixed reality tricks on Vision Pro are ever-present, and a huge part of how the headset works. Much like the Quest 3, the headset uses its passthrough cameras to see the real world in 3D while layering virtual displays and apps on top. Apple does it by default, though, from the very first launch screen with an app grid hovering in your room. Apple's passthrough cameras are the best I've seen, with almost no distortion. There's a bit of blur and lag when I turn quickly from side to side, and the quality dips in low light, but it's good enough to see details in my room through. I can read my laptop screen, use my phone, check my Apple Watch or even look at something on TV.

Displays and apps float in space with subtle virtual shadowing appearing on my real floor. But virtual screens don't recognize real objects or people. They'll just overlap. Virtual displays will block out real things, but Apple has included a clever trick for person recognition that makes anyone in eye view start to

ghost through your virtual environment or even apps if you want. It's designed to help with presence and feels like a visual version of Apple's adaptive audio on AirPods that lets conversation in.



Bridget Carey, ghosting through my virtual Vision Pro world from the real world as she sits next to me.
Screenshot by Scott Stein/CNET

Turning the large digital crown on top of the headset brings a virtual environment in, like a curtain. It can be partial or full. When fully surrounded, you're basically in VR. The crown controls volume, too, when you gaze at the volume icon, switching functions from whatever you were previously controlling like it's powered by mind control.

There are several immersive environments you can work in, although I expected more. There's the moon (a lunar surface), the edge of a volcano in Haleakala, a snowy forest in Yosemite, a lakeside at Mount Hood, a white-sand desert or several filters that tint the passthrough environment. Some apps also have their own sub-environments, such as Apple TV, which offers a curtained black box movie theater mode, and Disney Plus, which has some themed Star Wars and Avengers environments.

Even though Vision Pro doesn't do any room setup to map your room, as basically any other headset I've ever used has done, it still has room awareness. This shocks me. It's scanning and using depth mapping invisibly. When I get too close to an object, the virtual things in front of me go transparent and the headset warns me to move back. It's a real-time warning system.

And yet, there doesn't seem to be a lot of blending of virtual and reality in apps or environments. I haven't seen virtual things hop on my sofa, or run behind furniture. I haven't placed apps on walls or turned windows into aquariums. Apple's ARKit on iOS already can do this, but so far Vision Pro isn't emphasizing these tricks. I'm curious why not.



Me checking my watch on Tatooine, in Disney Plus' Star Wars environment.

Screenshot by Scott Stein/CNET

Vision Pro does love showing my hands, though. Real hands show up over virtual displays, in VR-like games and apps, and can always be seen. They're outlined in a fuzzy border like they're green-screened, but the effect is impressive. It also means I can always check my watch and read messages. Apple is clearly thinking of Apple Watch wearers here.

One thing that happens subtly and impressively is spatial audio. I watched the AFC Championship Game on Paramount Plus on a window in Vision Pro as I typed this, and the sound is coming from the TV area like it's hanging there. Apple says audio is realistically echoed around a room based on the sensed dimensions (audio ray tracing, Apple calls it). All I know is it sounds natural and helps create the illusion I'm looking through glasses at things in the real world.

Is the isolation too perfect sometimes, though? I watch movies with AirPods Pro buds in, turning my living room into a movie theater. After a while my son taps me on the shoulder and asks if I'm asleep. I say of course not. But my wife says she doesn't like this, that I'm so removed from everything. My son calls it a phone for my face. They have a point. My wife also says she's concerned about me getting lost in digital memories. Part of me thinks this is very real, and another part of me thinks this is an extension of what's already happened on our phones. While the Vision Pro creates presence by showing the real world through its passthrough cameras, or even replicas of my eyes, it also allows me to close these off, even sealing my audio world completely with AirPods. I can be in my own world, inches from my own family.



Disney Plus on Apple Vision Pro has a bunch of 3D movies, and this cool Disney Theater environment to watch them in. Screenshot by Scott Stein/CNET

My personal cinema

The very first thing I noticed about the Vision Pro in my first demo was how good the displays were. The 4K-resolution-per-eye, micro-OLED display tech Apple uses is basically the "retina" moment for VR and AR. It's vivid, richly colored, HDR and just stunning. Not only is it good enough for movies -- something Apple is touting constantly -- but it's better than any TV in my house.

There are limits, though. Apple isn't specifically confirming the field of view, but it feels a bit smaller than the Meta Quest 3, like seeing an amazing monitor through a scuba mask. The headset's refresh rate is generally around 90Hz but can go up to 100Hz. Some VR headsets can do 120Hz, but the Vision Pro looks great for film and video, and seems fine for games so far, too.

This type of super-high-res display works through some cognitive magic. Apple uses foveating rendering, which uses eye tracking to improve detail where you're looking while decreasing resolution in your periphery. It's not noticeable during use, but in screen captures recorded in Vision Pro's iOS-like screen recording mode, which you can see in our CNET video, you can see areas that are less detailed in the areas I'm not looking at. Also note that the screen captures in this review have clearer and less-clear areas, too. That doesn't show up at all in-headset, where the experience looks incredibly vivid and crystal clear.

Right now, the closest thing to a killer app the Vision Pro has is its cinema-level video playback. That's a hard sell for a \$3,499 headset, but if you go for a demo and see it, you'll probably be just as stunned as I've been. Movies can float in your room like hovering TVs, or be placed in a virtual cinema mode.

Apple supports 3D films, and a number of Apple TV purchases in my library have been upconverted for free: Dune, Ready Player One, Mad Max Fury Road and the recent Star Wars films. Disney Plus has a

bunch of 3D films, too. Avatar: The Way of Water -- a movie I wondered about seeing in a high-end 3D headset since I saw it in Imax in 2022 -- looks lovely. It sometimes gives me chills.



Watching a trailer for The Boy and The Heron in Apple Vision Pro's Cinema environment. I want to be here all day. Screenshot by Scott Stein/CNET

Apple's also working its own 180-degree immersive video format into Apple TV Plus, with a series of shows and programming coming. A few episodes are already available: a 13-minute documentary series called Apple Immersive Adventure, with the first episode about Faith Dickey, a highliner crossing fjords in Norway over a tightrope. There's also a three-minute immersive episode of Prehistoric Planet, full of beautiful CG dinos. Alicia Keys: Rehearsal Room is a video showing her during a recording session, and there's also an immersive nature film of rhinos. Apple's Immersive Video format feels like 3D Imax, room-filling and detailed. It's like an enhanced version of YouTube's 180-degree VR video format I tried years ago. Apple is promising sports and more in this format. It's exciting to imagine, but unclear what the rollout for future content is.

The built-in speakers on the Vision Pro also sound great, good enough to appreciate a film. The speaker buds are open, angling down to aim at your ears similar to Meta's Quest headsets, and can be heard by others in the room. A more enclosed feel comes if you slip in AirPods, which autoconnect seamlessly. Apple recommends the USB-C AirPods Pro model for lossless audio and less lag, but technically any pair will work.

There are plenty of video providers that are already on Vision Pro, including Peacock, Disney Plus, Paramount Plus, Mubi and the NBA. [Netflix](#) and YouTube are noted no-shows, but it's easy enough to play them in the Safari browser, similar to using a laptop. Only one video window plays at a time right now; if I have an NBA game on and then open Peacock to watch Mrs. Davis, the game pauses. It would be nice to keep multiple streams open to scan something with the audio off.



Hi Mom, you're in my Vision Pro. Screenshot by Scott Stein/CNET

My memory machine

Apple is also expecting the Vision Pro to be a place to see all your own life moments, reliving them like a scene out of *Minority Report*. I tried watching recorded "spatial videos," which are 3D videos that I previously shot on an iPhone 15 Pro. I also played back 3D videos and photos recorded directly with Vision Pro, which has its own cameras.

The Vision Pro needs relatively well-lit rooms to record video, unlike the iPhone, but can shoot photos anytime. The photo and video quality in 3D isn't as good as Apple's stunning 180-degree Immersive Video format, not even close. But when expanded to a fuzzy-bordered viewing mode, it starts to feel like a replayed memory. I went back to the holidays, to the Museum of Natural History, to a hot pot dinner with a friend in San Francisco, to a snowball fight with my kid. I started to forget where I was and imagined I could just walk into the moment.

I'd never wear the Vision Pro to take photos and videos of my family, not unless I was already in-headset and just wanted to capture a moment quickly that I saw. My kids find the idea as invasive as me shooting photos and videos on Meta's Ray-Ban glasses. But I definitely shoot on the iPhone, and it's great that the videos and photos are 2D-viewable even if you don't have a Vision Pro. It's possible that they may be VR-viewable on headsets like Quest more easily over time too (I hope).

Again, panoramic photos wrap around and look like a window into another world. I've already discovered a ton of old panoramas I forgot about, and am marveling at them. A trip to see the New York Jets play in Green Bay surrounds me like a scene from VR.

Apple's immersive videos aren't volumetric, meaning you can't walk around them, or "lean" into them. They're just 3D, like any 3D film you've ever seen before. But it's a foot in the door. The frame rate and

resolution don't feel good enough to be ultra-real yet, but Apple has evolved its cameras at a pretty impressive clip over the past 10 years.

While this isn't the No. 1 reason I'd use a Vision Pro, it's compelling. Having all my photos and videos on tap on a big screen is fun and it's a lot better than viewing on my phone or laptop, or even my TV.



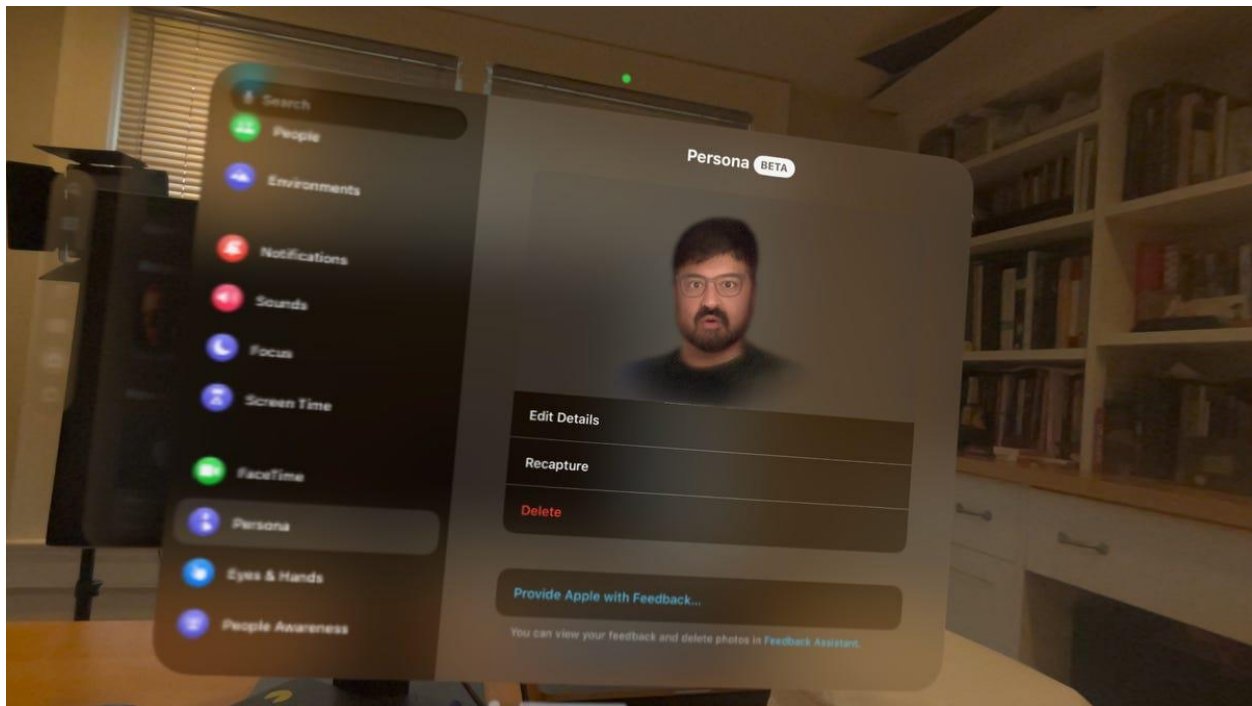
Hello, there. Josh Goldman/CNET

My face, made virtual

Now let's get to the weirdest part of Vision Pro: how it virtualizes my face. I blink my virtual eyes at my wife as I sit in the living room, and she doesn't know what to make of it. Neither does my colleague Bridget Carey. It looks like, on the outside of the Vision Pro, that my eyes are there, peering through muddy glass, underneath. They're not my eyes. They're a 3D scan animated on a lenticular display under the glass.

Apple's decision to add a display, called EyeSight, that shows your eyes despite being goggled in what's basically a VR headset is one of the boldest design moves this device has, and it's a mixed bag. The fascinating display is tech I haven't really seen before. It looks 3D, sort of. It seems to float deeper than it is. And it's dimmer and lower-res than I expected. It's surprisingly hard to photograph or film.

These eyes only appear when someone is nearby to look at me, I think. When I'm in an app, the display becomes a shimmering iridescent thing, indicating I'm in an app. Sometimes my eyes seem to half-appear. And they blink. They seem to frown, or dart around, or go wide or squint. They animate as my face emotes. It's uncanny.



My Persona is a scan of my own face, animated to match my facial expressions. You can only save one at a time for yourself. Screenshot by Scott Stein/CNET

These eyes appear thanks to Persona, a face-scanned personal avatar Apple is launching in beta. Unlike the Meta Quest, which constructs a cartoon avatar for your virtual personification, Apple scans a unique, almost photo-real version of yourself that's locked to your own account and stored locally on the headset. Per Apple, it's secure and you'd need to use your own iris-scanned Optic ID to access it.

The Vision Pro has a Guest Mode which can demo apps to anyone else who wants to check them out, but that person won't be able to use your Persona.

This Persona is used for FaceTime calls, Zooms or anytime you'd connect with anyone with camera-based chat. It's a necessary concept since, when you're wearing a VR headset, you can't show your face in video. My Persona facially animates: I can stick out my tongue, move my lips, frown and smile. It's like a hyper-real Animoji.

Meta has a similar type of tech in the works called Codec Avatars, which I saw at Meta's Reality Labs back in 2022. Apple is debuting its version first, but it's a work in progress. I tried it in some test FaceTimes, and it's weird. My family thought it looked like an airbrushed almost-version of me. Another colleague, Lexy Savvides, was weirded out.

And I can't wear my real glasses with my Persona. The scan is made by me holding the Vision Pro out in front of me, turning my head around, making a few smiles and closing my eyes, but all without glasses on. Apple adds virtual glasses afterward, offering about 20 virtual pairs, but they're all smoked-glass colored, and none perfectly match mine. It adds to the weirdness.

Apple admits it's still exploring how to capture diverse faces well, and there may be changes to Persona - hence the "beta."



Opening a few 3D games in Vision Pro while also watching some of a playoff game. Apps become semi-transparent when they overlap. Screenshot by Scott Stein/CNET

Apps: Not a lot, but plenty of iOS ones

The biggest unanswered question about Vision Pro is how many unique apps will emerge for it. At the time of this review, prelaunch, the App Store shows Vision Pro-optimized apps, but pickings are slim. Apple has a few Vision Pro games in the subscription-based Apple Arcade, including a full-motion game called Synth Riders (a popular VR game that uses my hands to control balls that hit rhythm targets to a soundtrack, almost like Meta's Beat Saber). Game Room, by VR developer Resolution Games, floats 3D chess tables and card games into my room, where I can control pieces by tapping my fingers and dragging.

Mobile games like Cut the Rope 3 and Bloons TD 6 are here, too, with mildly immersive framing devices, but feel like floating phone games. Puzzling Places, a VR game with 3D puzzle pieces you put together (one of my favorite Quest games), is also available.

You could play lots of other games on Vision Pro via iOS compatibility if they show up in the App Store. I saw plenty. You could pair a game controller and play on a virtual big screen. That's a fun idea, maybe.

But will many immersive mixed reality or VR games really make the move to Vision Pro, considering its lack of VR game controllers and the limited early-adopter nature of the hardware? Easy answer for now: If you want immersive gaming, just get a Quest 3.

It's all the rest of the iOS apps on tap that make Vision Pro interesting. I've already loaded Slack, X, Microsoft's apps, Paramount Plus, Luma Fusion and Darkroom. Using them in a VR headset is unique, and makes me feel like I'm extending my workspace all around me.

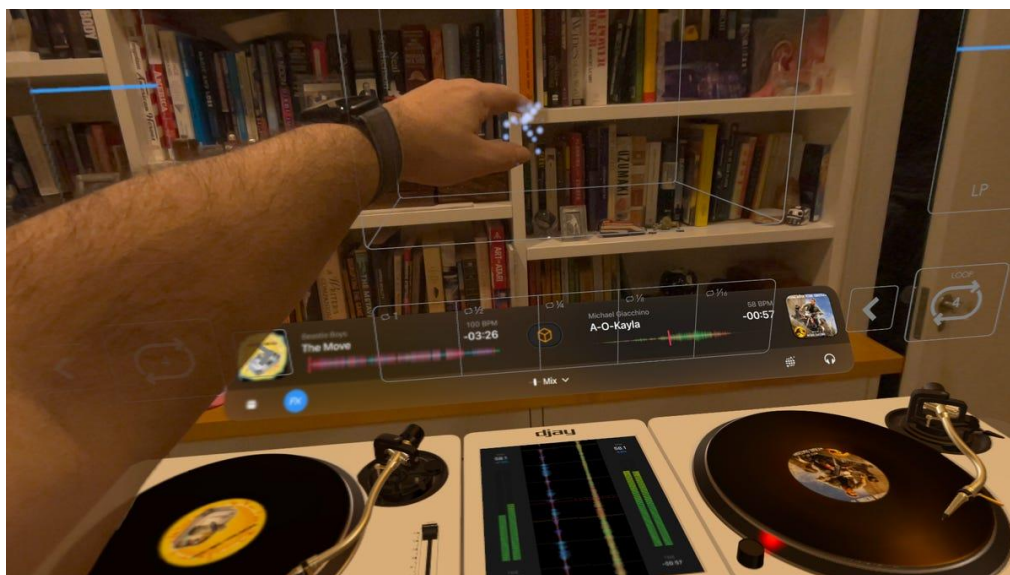
The other apps, the more immersive ones, feel few and far between. But they show some hints of promise.



Reaching out to dinosaurs in my office. Regular work day.

Screenshot by Scott Stein/CNET

A Lowe's Design app, for example, just walks through a simple VR-like demo of picking out customized kitchen designs. Encounter Dinosaurs, a preloaded experience that's like an immersive promo for Apple's Prehistoric Planet series is a short several-minute dive that opens a wall of my room and shows realistic dinosaurs emerging from it. DJay opens up virtual 3D turntables in my room that I can spin records or lift the turntable arms on; it feels fun, but my hand interactions feel limited.



Mixing up turntables and adding effects with the AR app DJay, in my home office.

Screenshot by Scott Stein/CNET

Jigspace, a longtime AR-enabled iOS app, is on Vision Pro with a handful of available objects and sample instructions to demo (like a jet engine and an F1 race car). Grabbing items gets a little awkward, though. Again, I have to look and pinch and drag 3D things. I wanted Apple to have a more advanced interaction model for 3D objects and environments, but it's still mostly pinch-and-drag, just like everywhere else in the OS.



Apple's Keynote app drops you into the Steve Jobs Theater. Recognize the pitch deck?
Screenshot by Scott Stein/CNET

Some of Apple's own apps are Vision optimized, others aren't. Freeform, a collaborative whiteboard-like app, which I expected would be a Vision Pro mainstay when it was first released, is front and center. Keynote has a rehearsal mode where I can test a presentation in a virtual version of Steve Jobs Theater. Mindfulness presents some short meditations with a beautiful spray of glowing translucent rainbow flower petals and an audio guide, showing potential for more mindfulness apps to come (it was nice to try in bed one night before I went to sleep).

But there are plenty of missed opportunities. Maps, Apple's app which already has rich 3D detail, isn't VisionOS optimized. Pages still has the same interface as the iPad version. GarageBand (which could have had virtual instruments) isn't optimized, and neither is iMovie. Apple will certainly adapt these, over time, but not yet.



Vision Pro as my computer: a whole bunch of complex thoughts here.
Josh Goldman/CNET

My everywhere computer

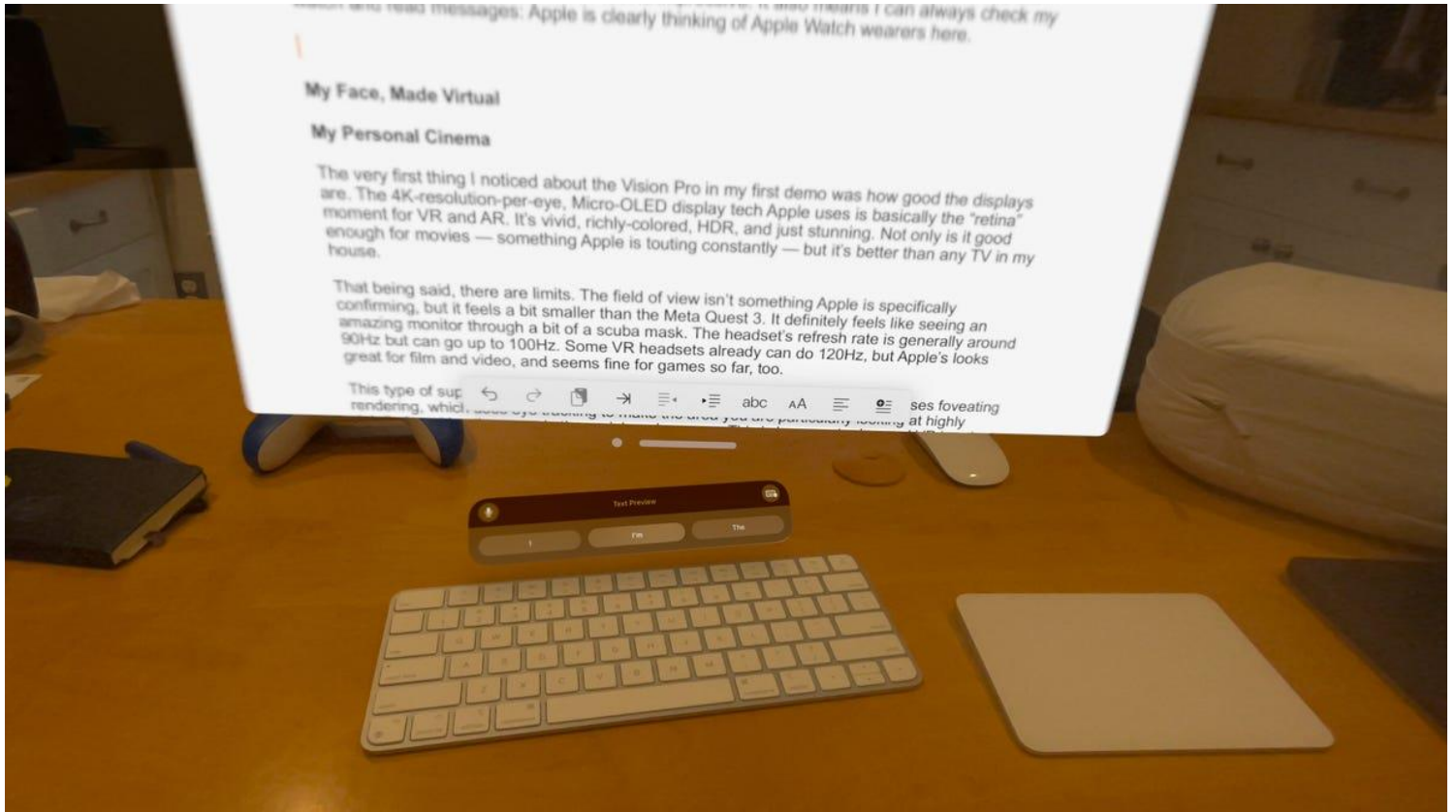
I've been trying the Vision Pro as my own computer and it feels like monitors all around me. Over to my left is a 3D golf game. To my right is a floating set of photos. I've paired a Magic Keyboard and Magic Trackpad. I can float a TV. I can ask Siri to start playing some music.

I can see my keyboard keys and the trackpad. It's weird that I can also see a smart type toolbar that appears virtually, staying right above wherever my physical keyboard is, moving when I move it like a virtual halo. Occasionally I glance at it and trigger dictation, which I don't want. Sometimes my eyes accidentally trigger an action. Also, some of the iPad-like Pages options are hard to select, and feel less intuitive for a big screen. There's an odd struggle, still, between virtual and real.

But it's crazy how much does work. I'm writing this on a new product that hasn't even launched yet, and it already feels pretty powerful.

I can also connect Vision Pro with a Mac, using a feature called Mac Virtual Display. VR headsets like the Quest [can do this too](#). Apple only allows one monitor view of your Mac, although it's a nice big 4K version, and any number of Vision/iOS apps can also float simultaneously around it. I filled my whole area with apps, overlapping them in semitransparent layers. The Mac's keyboard and trackpad cursor move across the Mac view and into other apps, similar to how Apple has allowed Mac and iPad keyboards to control a nearby Mac and iPad at once.

What if my desk was just floating monitors? What if I didn't need anything but a headset? Vision Pro gets close to that feeling when all the apps are open and the flow is going. I'm doing that now. I'm in my virtual floating computer as I write this. There are glitches, and sometimes the controls feel too floaty, but in its first form, I'm shocked at how good it already is.



Typing on a Magic Keyboard floats a virtual toolbar above it. It follows the keyboard around.
Screenshot by Scott Stein/CNET

It's great, except for when I find that the virtual display sometimes doesn't connect, or my display shows a connection problem and freezes up. (Apple says this is a preproduction issue that will be addressed by launch.)

And while the Vision Pro's display is great as a monitor, staring into 3D space for a while puts my eyes into a different focus zone than actual reality. Taking the headset off to work on my laptop, my eyes need time to settle and refocus. I feel myself slipping into long sessions in Vision Pro, but my eyes want me to take breaks.

Will I carry Vision Pro around like a computer? In the Apple travel case (sold separately for \$199), the Vision Pro is like a very bulbous set of headphones. It's bigger than my large backpack can hold. Also, I'd need a keyboard and trackpad. A laptop or iPad is a more portable option, and less in need of special packing care.

And there's the limited battery life. The Vision Pro lasts about two hours or so on a charge despite its big battery. You could keep it USB-plugged into a nearby outlet via the battery, but that's a lot of cabling. By comparison, my MacBook Air lasts well over a day.



Apple's travel case for Vision Pro costs \$199, and I can't imagine buying a Vision Pro without it.
Josh Goldman/CNET

How much will this really cost you?

The Vision Pro starts at \$3,499, but that's with 256GB of storage. Apple also sells storage tiers in 512GB (\$3,699) and 1TB (\$3,899). (Prices and release dates for countries beyond the US are still yet to be announced.) I tested a 1TB Vision Pro and have already filled about 130GB easily. I'd be concerned about filling the 256GB version fast, considering apps are around a few gigabytes apiece so far, syncing my Photo library took up 13GB alone, and downloading a 3D version of Avatar: The Way of Water on Disney Plus occupied about 24GB.

Then there are the extras. I need prescription lenses, which cost \$149. A carrying case seems like a must for such a potentially delicate product with a curved glass front, but Apple's nice padded case costs \$199. AppleCare Plus also seems like a better idea here than with any other Apple product considering we don't know yet how durable Vision Pro even is, and that's another \$499. It's a lot. Like, *a lot* a lot.



What comes next for the Vision Pro? It feels like an open door. Josh Goldman/CNET

The dream vs. the reality

I had this weird moment, watching Ready Player One in 3D in the Vision Pro. I got a little teary. I thought about dreams versus reality. It was a theme I visited when former CNET editor Sean Hollister and I [reviewed the Oculus Rift](#) back in 2016. Now I'm thinking of it again, in a whole new way. The Vision Pro comes with its own drawbacks and limits all over the place. But it's also, at its best, a stunning look at the future.

Do I believe in the destination of this mixed reality future? Yeah, I've been writing about it [for 10 years](#). I can see it coming. The Apple Vision Pro is a moment where the ecosystems are starting to finally arrive, the hardware is hitting levels of audiovisual quality that are truly remarkable and input systems are being reinvented. It's an exciting time, and the Vision Pro won't be the only product in this landscape. However, it'll likely be the most influential since the Oculus Rift.

That said, it's clearly not a device you need to get on board with now. The Mac debuted [40 years ago](#) this month, a coincidence that Apple seems well aware of. The Mac was the birth of modern computing, but few people had the first Mac.

Will the Vision Pro be the first step toward modern spatial computing in mixed reality as we know it from now on? Maybe. What really makes the Vision Pro seem futuristic isn't the display or the apps, it's the input. Eyes and hands. Other headsets have eye tracking and hand tracking, but none have the combination working as smoothly, subtly and intuitively as the Vision Pro.

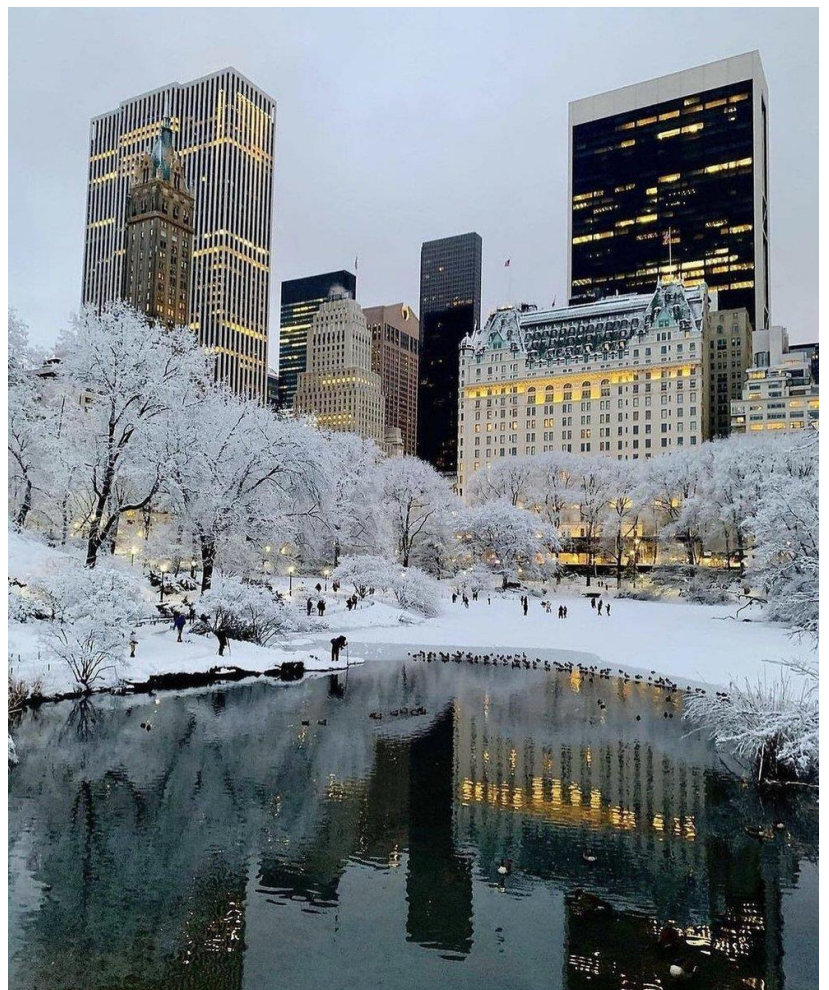
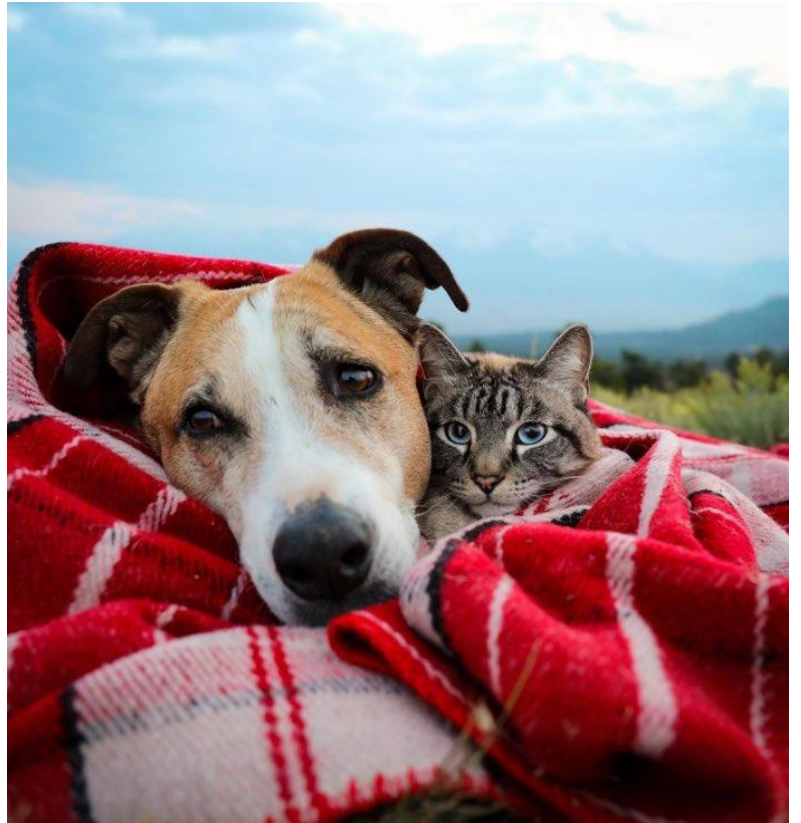
But it's not the final version. Haptics is a missing piece, being able to feel feedback like on a phone or watch or with game controllers. I want more precise controls in 3D space, something fully multifunctional. I'm not sure hand tracking and eye tracking alone can do all of that. Apple already has a haptic response wristband called the Apple Watch, which is starting to get its own gestures [with double-tap](#). There's an obvious connection there, but Apple hasn't connected those dots yet. Maybe something neural could be next, like [what Meta's exploring](#).

And with players like [Samsung](#) and [Google](#) coming, as well as a race toward smaller, glasses-like devices down the road, there will be a lot more changes to come. My favorite things to do on the Quest -- games and fitness -- aren't on the Vision Pro much. I'll still use my laptop, phone and iPad as my main computers for now, but I imagine a future version of the Vision Pro as something that could swallow them all up someday. Not today. But I do feel, right now, that I want to dive back in.

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