

# Magazica

Issue December 2025

## Health

Hope, Happiness

*Virtual Mental Health: Promise and Pitfalls*

**Life Lessons acquired from Beating Cancer Twice, Surviving a Heart Attack, and Inspiring Ottawa's Community**

**Burnout and Beyond: Building Healthy Workplaces**

**Cardiovascular Health: Thrombosis and Stroke Awareness**

**Did You Choose That Gift, or Did Gen AI Choose It for You?**

**Invisible Disabilities and Workplace Inclusion**

*Stu Schwartz*

# Table of Contents

- |   |  |
|---|--|
| <b>04</b> Life Lessons acquired from Beating Cancer Twice, Surviving a Heart Attack, and Inspiring Ottawa's Community | <b>24</b> Virtual Mental Health: Promise and Pitfalls  |
| <b>13</b> Burnout and Beyond:<br>Building Healthy Workplaces  | <b>30</b> Did You Choose That Gift, or Did Gen AI Choose It for You?   |
| <b>16</b> Women's Health: Closing the Gap   | <b>49</b> Cardiovascular Health: Thrombosis and Stroke Awareness   |
| <b>18</b> From Food Security to Plant Proteins  | <b>52</b> The Promise of the Canadian Dental Care Plan   |
| <b>20</b> Invisible Disabilities and Workplace Inclusion  | <b>54</b> From Pilots to Patients<br>How to Build the 5% of Gen-AI Systems That Succeed in Transforming Healthcare |
| <b>22</b> Pregnancy and Infant Loss: Toward Compassionate Care  | <b>65</b> Book of The Month  |

# Magazica

## **Publisher**

Magazica Inc.

## **Publication Manager**

Ashkan Pourzeinali

## **Head-Editor**

Suman Dhar

## **Head-IT**

Moe Nabi

## **Website**

[www.magazica.com](http://www.magazica.com)

## **Contact to Editorial**

[editorial@magazica.com](mailto:editorial@magazica.com)

## **Marketing Opportunities**

[ads@magazica.com](mailto:ads@magazica.com)



[@mymagazica](#)



[@magazica](#)

# Interview

*With a Cancer conqueror*

Survivor's Saga



*Stu Schwartz*

Magazica

Stu Schwartz's story reads like a blockbuster script - radio fame, life-threatening battles, and a comeback that redefines resilience. Once a familiar voice on Ottawa's airwaves, Stu faced cancer not once, but twice, and survived a heart attack that could have ended it all. Instead of retreating, he turned pain into purpose, becoming a passionate spokesperson for local businesses and a beacon of hope for countless families. His journey is raw, real, and deeply human - proof that adversity can sharpen clarity and fuel impact. This interview uncovers the mindset shifts, community ties, and personal grit that keep Stu thriving against all odds.



# Stu Schwartz: Life Lessons acquired from Beating Cancer Twice, Surviving a Heart Attack, and Inspiring Ottawa's Community

**Magazica:** Dear viewers, listeners, and readers, Stu Schwartz is a name many Canadians recognize from the airwaves, but his story goes far beyond that. Today, Stu is a passionate spokesperson for local businesses that serve and uplift the Ottawa community. What truly sets Stu apart is his resilience. He's not just a survivor - he's a thriver. Having beaten cancer twice and survived a heart attack, Stu brings lived experience that is raw, real, and incredibly inspiring. In today's

conversation, we will explore all of those aspects. Stu, welcome. It's a pleasure to have you.

**Stu Schwartz:** Thank you. Let me just put on my cape here - my Superman cape.

**Magazica:** Thank you for doing that. You are a Superman, considering everything, and our readers, listeners, and viewers will get to know it very soon. Let's begin with a moment that changed everything. Your journey took a sharp turn with your cancer diagnosis and, later, a heart attack. Can you take us back to that moment? What was going through your mind?

**Stu Schwartz:** Life was going great. I was at the top of my game in 2015. Then, six weeks later, on February 15, 2016, I was driving into work at 4 o'clock in the morning. I noticed that the cars on the opposite side of the road had red headlights. I thought, "Why are the headlights red? Is something wrong with me?" Throughout the morning show, I was doing "Dr. Google," which is the worst thing to do. My co-host, Angie - who now works at the Cancer Foundation - and I determined that my diagnosis was simply that I needed vitamin D. With no medical background, that's what we decided. Later that day, I went to Shoppers Drug Mart and asked the pharmacist if they had vitamin D. She asked about my symptoms. I told her I hadn't been sleeping well and was very tired. She knew right then and there that I had leukemia and sent me to the Ottawa Civic Hospital.

Six hours later, I was sent to the General with Dr. Chow from the SENS. That's when I was told I had leukemia. I foolishly asked, "Is that cancer?" The oncologist replied, "Yes." I said, "Okay, what do we have to do? I have stuff to do." She told me I would be in the hospital for a while. I said, "That's not going to work for me. I have events on Friday, I have events all week." But there was no room for discussion. I was admitted right away. Had I gone home that night, I likely would have died because I literally had no blood running in my system.

I was basically a Formula One car riding on empty - no gas.

**Magazica:** So many people struggle to stay hopeful during such a severe health crisis. What helped you stay mentally strong during that treatment period, and what advice would you give to someone facing similar challenges?

**Stu Schwartz:** If it wasn't for my wife and kids, I'd be dead. My wife is my rock. I've been saying that since day one. I don't know if I would have been equally supportive if the roles were reversed. I don't know if I would have had it in me, because I'm not as strong as my wife. There's nobody stronger. She is literally the rock in our house. And my kids are resilient.

I would tell anyone who's been diagnosed - because people reach out to me on social media saying, "I just got diagnosed," or "My sister-in-law just got diagnosed" - that it's a rollercoaster ride of emotions. Don't be afraid to ask your family and friends for support, because you're going to need it. I never used to feel comfortable asking. I was always on the opposite end of charities, supporting other events. This was new for me.

I share my story publicly as a cheap way of therapy.

**Magazica:** That's really inspiring, because sometimes we feel shaky or hold ourselves back from asking for help when we really need it.

**Stu Schwartz:** Yeah. And boy, did I need it. If it wasn't for my late friend, Hugo Lepore, who drove me to the hospital every day... In the beginning, I was treated as an inpatient for a week or two, then they sent me home. After that, I was back in for about six weeks, treated as an outpatient. My good friend Hugo would pick me up every single day and take me to the hospital. I had nothing in the tank. There were days when I was low on blood, so I would go and get a top-up - someone else's blood. What they did to me was basically like reinstalling a computer's operating system. They took mine out and reinstalled it with somebody else's blood running through my system. Twice.

**Magazica:** You spent years behind the mic, connecting with audiences. How did your experience in broadcasting prepare you for this new chapter as a spokesperson and community advocate?

**Stu Schwartz:** Well, I never meant to be a spokesperson for leukemia, but it actually saved me. People asked, “How could leukemia save you?” It did because it opened the doors to a lot of people who had gone through similar experiences, both positive and negative. I didn’t receive very much negative. I mean, I had some people who weren’t a fan of me - whatever.

And the experience in broadcasting helped me to understand what I was going through by sharing it with my listeners. I decided to take my story public because I thought, how could I keep this private? I needed to share my experience. I’m glad I did, because it opened my eyes to a lot of things. To this day, nine years later, it has opened my eyes and gained me a lot of friendships.

**Magazica:** You now represent several local businesses that touch people’s lives in different ways, from food to vision care to retirement living. What draws you to these diversified organizations, and how do you align your personal mission with them?

**Stu Schwartz:** When I was let go from Bell almost two years ago, I sat in my house for about six months, drawing a blank. I thought, what am I going to do? I can’t work nine to five. I’ve never worked nine to five. I’m not wired to work nine to five. My wife said, “Why don’t you just do what you’re doing - just do it without a radio show?” I said, “How can I do that without a radio show?” I already had Barrhaven Ford.

City View Retirement had reached out to me a year before I got fired. Just after I got fired, I wasn’t allowed to work for them while I was still being paid by Bell on leave. So I had those two lined up.



And then one thing happened after another. Brands came to me. I walked into Cobs Bread, which is five minutes from my house, one day in August two years ago. As I walked out, I turned around and said, "If you guys ever need a spokesperson, call me." The owner was behind the counter and said, "I'm the owner. I'll call you tomorrow." That fell into my lap. I never want to represent a brand I wouldn't personally believe in.

Somebody asked, "How could you represent City View?" I said, "Because our goddaughter's grandparents live there and speak very highly of it." I've done my research on all my clients. When I walk into a client, I basically say, "I'm going to put your name on my forehead. I'm going to wrap your business around me as if I own the place." Everything I speak about comes from that belief. I always tell clients, "I'm not going to expect somebody to pay for your business if I wouldn't personally buy it."

So I try to put my name behind it.

**Magazica:** You have seen firsthand how everyday services like fresh food, optometry, and senior care can impact health. What do you wish more people understood about the connection between community services and well-being?

**Stu Schwartz:** I always complain that the government doesn't do enough for healthcare. I don't know the ins and outs, but I've talked to members of Parliament and provincial members of Parliament to get the behind-the-scenes story. It's such a complicated web. When they want to put one thing through, they have to think, "Okay, we're going to upset a certain amount of people, but we're going to make these people happy." They can never make everyone happy.

I've gone through the worst of the worst and the best of the best. I say the worst of the worst not because anyone treated me badly - I never had bad care from the Ottawa Hospital General Campus. Every nurse there treated me with respect. There were days when I was in a bad mood, and a nurse would come in, realize it, and I'd end up crying on their shoulder.

“

**YOU CAN'T ADJUST THE WIND, BUT YOU CAN ADJUST YOUR SAILS**

”

They're not paid to let you cry on their shoulder, but they're expected to walk you through it.

I wish the community understood that you should never get upset with anyone working in a hospital. I know you're waiting in emergency, you're frustrated, you want to be seen - but hospitals aren't making you wait on purpose. I've been to CHEO with my kids, and we had to wait. Everyone waits, unfortunately.

When I had my heart attack, I got in easily because I was literally having a heart attack. I walked up to the emergency entrance and said, "Look, I've had cancer twice, I've beaten cancer twice in this hospital, but I feel like I'm having a heart attack." They put me in right away. And sure enough, I had a heart attack.

**Magazica:** We'll come to that in a moment. But beating cancer twice - that's not just a medical feat, it's a serious mental one. What were some of the toughest moments, and how did you find the will to keep going, especially the second time around?

**Stu Schwartz:** The second time around, we were sitting in the kitchen during COVID, which was the worst time to be sick. Dr. Keckery said on a Zoom call with me and my wife, "Stuart's got a 40% chance of living." I thought, what?



The first time, I got full-body radiation - 22 rounds - including my brain. I asked, "Why are you going to radiate the brain? There's nothing in there."

The doctor said, "You'll have three side effects of radiation. One, you'll get lung cancer." I thought, great. "Two, you'll get cataracts. Three, you'll get loss of libido." I said, "Loss of what?" That's the only thing I heard.

I did get cataract surgery. Thankfully, I didn't get lung cancer. The serious part was, I didn't think... I wasn't fearful of death the second time.

Then I thought about it. I looked at my wife and said, "No, we're going to beat this the second time." The first time, I went through cancer cocky. I was in the best shape of my life, and nothing could take me down. After that first battle, I thought I was done with it. I looked back and thought, "That cancer had nothing to do with me. I'm a strong guy."

The second time around scared me, to be honest. During my second bone marrow transplant, they didn't give me much radiation.

Although, after I got my second bone marrow transplant, I remember texting my buddy about a week after. During COVID, nobody could come visit you. I was in the hospital room by myself, and I wasn't even allowed to leave the room to walk on the floor. I said to the nurse one day, "I'm gonna go crazy, I need to stretch my legs." She said, "I can walk with you." I said, "I'm not a baby." She said, "You're sick, and if you walk out here and something happens, we can't be held responsible. You could die on the floor." I thought, oh God. That's when I understood it.

It was hell, to be honest. The month of June 2020 was the worst month of my life. Because I was going through cancer, I wasn't allowed to see my wife and kids. I could only talk to them on FaceTime. I worried about death day in and day out. There was only so much I could watch on my iPad.

I started to think about death, but then I thought, okay, get your head out of the gutter, you'll live. That's when I connected to everybody on social media. Nothing was off-limits. I'd tell everybody, "I had a bowel movement this morning, I pooped twice." And thank God the Facebook community accepted it. People from Ottawa and around the world reached out to me. If it wasn't for my social media presence and my wife, I'd be dead.

**Magazica:** And after surviving a heart attack, did you make any major lifestyle changes? What small habits have made the biggest difference in your recovery and daily life now?

**Stu Schwartz:** I would get up every weekend before my heart attack and make breakfast for the family. My son said to me in hospital, "So explain this to me. Every weekend you'd get up and make breakfast for all four of us. I'd get two pieces of bacon, Isabella would get two pieces of bacon, Mom would get two pieces of bacon. How much did you have, Daddy?" I had the rest.

I don't have bacon anymore. Occasionally, I have peas. And the cardiologist said to me, "You will have another heart attack." I said, "What? How?" He said, "The way you're going, you'll have another heart attack. Go to the Mediterranean diet." I said, "I could eat shawarma every single day." He said, "No, not shawarma. Just a healthy diet." Thankfully, my son finally knocked it into my head this summer.

We went to Italy, and before we left he said, "You're gonna die if you go to Italy, because we have to walk everywhere. You'll enjoy it much more." So I started walking.

My son's on this crazy diet. He's in the best shape of his life, not an ounce of fat on him. He's almost 20 years old, and he said, "You gotta start walking." Now that the University of Ottawa Heart Institute is running their Jump In campaign, I'm getting my steps in every day. Thankfully, I did walk before we went to Italy, because had I not, they would have sent me home in a box.

So I'm trying to get more active. I'm walking around Costco six times - I don't care.

**Magazica:** You have always been in the public eye. How do you balance being open about your health journey while protecting your mental well-being?

**Stu Schwartz:** I am what I am. When I run into somebody at Metro or Costco, I want them to see me as I am. I don't want them to think, "Stu's totally different than he was on the radio." I want them to see me as I am.

When I meet people I'm a fan of, I've only been disappointed once, because they weren't as I thought they'd be. But when people live up to their reputation, there's nothing better for me as an individual.

When I met Huey Lewis the first time, I was such a fan of his music. It was 2010, and Mark Monahan brought him to Bluesfest after I begged and begged. I remember standing there talking to Huey Lewis. I said, "Dude, I've waited my whole life to see you. I'm 40 years old, and I love your music." He's probably heard that a million times, but he was so gracious and so nice - not because I was on the radio, but from one human being to another.



Five years later, he came back to town for Jazz Fest. I was in the front row and photographed him. Later, my buddy and I saw him at the Chateau Laurier bar. My buddy said, “That’s Huey Lewis at the bar.” I said, “No, it’s not.” He said, “Yeah, the guy with the glasses - that’s Huey Lewis.” So I told the server, “Buy Huey Lewis a drink and charge it to me.”

As we were leaving, Huey Lewis came over and thanked us. He said, “I remember you.” I said, “Me?” He said, “I remember you in the front row. You took a picture.” I said, “Holy shit, you remember me?” I showed him the photo. He said, “I want to send that to my manager.” He took it and sent it to his manager.

Then, when I got sick in 2016, my buddy reached out to their team. I got a nice letter from Huey Lewis that said, “Stuart, sorry to hear about what you’re going through, but you’ll beat it.”

That, to me, made my life. This guy is a true rock star. I’m such a fan of his, and he’s part of my growing up, part of my youth.

**Magazica:** That’s very inspiring. And many of our readers are going through tough times - health issues, burnout, and every kind of uncertainty. What’s one mindset shift or piece of advice that helped you, that you want to impart to them, to move forward whenever things felt impossible?

**Stu Schwartz:** Somebody sent me a great quote when I got sick the first time, and I put it on my socials. I said, “I live by this quote: You can’t adjust the wind, but you can adjust your sails.”

So if you think about it... Every time I start complaining about something, my wife says, "Hey, remember that quote you said?" Right now, I'm going through something and I'm really upset about it, but I remember that quote. I even remembered it this morning when I went to see my psychotherapist. I see a psychotherapist once a month, thank God. I pay her to listen to my problems.

But that resonates. For some reason, it resonated with me, and I quote it to this day.

**Magazica:** And the last question, last talking point - what's next for you, Stu? Any upcoming projects, causes, personal goals, or missions that you're excited about?

**Stu Schwartz:** I just want to keep supporting the charities that I'm supporting. I want to continue to use my soapbox for good, not for bad. My wife said, "People are following you not for your political opinions, they're following you for your silly food takes."

And I play with people that way, because I know to the core - I say ketchup doesn't belong on anything but fries. It doesn't belong on hamburgers or hot dogs. I love messing around with people on that stage. But if I get a small role in a movie, like one line, that's a goal of mine. Other than that, I just want to keep on the same journey I'm on.

Somebody said to me on LinkedIn after I got let go, "Stu, you've been doing it everyone else's way for the last 30 years. You've got about 10 years left to work in you. You're 50, 51. Do it your way." So I'm doing it my way - sleeping in, which I've never done in my life. And it's incredible. I didn't realize people actually sleep in until 7:30, 8 o'clock.

I was getting up at the crack of stupid for 25, 30 years, not getting any sleep. One thing I'll tell people starting in any business: you've got to get your sleep. It's so important. Your body's like a computer. If you leave the computer on constantly, it'll eventually die out.

Your car needs rest, everyone needs rest. When you shortchange your body on rest, your body will try to protect itself. You need sleep.

So I'd like to continue on the path I'm on. I don't have any big aspirations. I worked for 30 years in radio. I was the announcer for the Sens for 12 years.

I dreamed of both of those jobs, I lived both of those jobs. I'm 51. What's left? I don't know.

Well, we'll see what. The world hasn't served me.

**Magazica:** Keep inspiring like this and keep inspiring us. Keep inspiring even Generation Alpha, the next generation. Thank you very much for your time, Stu. Thank you.

**Stu Schwartz:** Thank you very much.



# Burnout and Beyond: Building Healthy Workplaces

By Editorial Team

---

Canadian workplaces are in crisis. Surveys indicate that 70 % of employees feel their productivity has declined due to poor mental health, 59 % feel burned out, and 40 % live with constant stress. Women report lower mental-health scores than men. Healthy Workplace Month urges employers to examine the factors driving burnout and adopt supportive policies.

### **Causes of Burnout**

High workloads are the most frequently cited stressor, affecting 30 % of employees. Financial stress is another major contributor; nearly half of the respondents list money as their primary worry. Women often shoulder greater caregiving responsibilities, compounding stress. Remote and hybrid work blur the boundaries between job and home, leading to longer hours and social isolation.

### **Economic Impact**

Burnout isn't just a personal issue—it's costly. Mental Health Research Canada (MHRC) estimates that burnout affects 39 % of employees and costs employers up to \$28 500 per person due to absenteeism and turnover. Yet only about 30 % of organizations have a workplace mental-health strategy. Deloitte's research suggests a return of \$1.62 for every dollar invested in mental-health programmes.

### **Creating Psychologically Safe Workplaces**

Psychological safety means workers can express concerns without fear of reprisal. The MHRC notes that 68 % of employees feel their workplace is psychologically safe, while 23 % do not. Trauma exposure at work is common: 22 % of Canadians report workplace trauma, often stemming from interactions with clients or co-workers. Employers should implement trauma-informed leadership, provide training to recognize distress and establish peer-support networks.





### **Policies and Supports**

Effective supports include paid time off, flexible scheduling and access to mental-health services. Virtual care platforms allow employees to access counselling via video or text, reducing wait times. Many companies now offer “mental-health days” and expanded benefits to address burnout.

Burnout is pervasive but preventable. By acknowledging the economic costs, adopting evidence-based interventions and fostering empathetic leadership, Canadian employers can create healthier workplaces.

### **References:**

Benefits Canada. (2025). Workers’ mental health decline as burnout and financial stress rise .

Mental Health Research Canada. (2025). Workplace mental health report.

WELL Health. (2024). Embracing virtual care to support mental health.



# Women's Health: Closing the Gap

By Editorial Team

---

Women's health has historically been narrowly defined around reproduction. Yet women live longer than men while spending more years in poor health. The McKinsey Health Institute reports that Canadian women spend 24 % more time in poor health and experience 14 years of disability versus 11 years for men. Closing this gap could add \$37 billion to the economy annually by 2040.

## Defining the Gap

Conditions like autoimmune disorders, chronic pain and anxiety disproportionately affect women, yet research often overlooks them. Women are underrepresented in clinical trials, and female-specific symptoms (e.g., nausea during heart attack) are frequently dismissed. Structural bias in healthcare delivery results in diagnostic delays and misdiagnoses.

## Innovation and Research

Tailored innovations are emerging. Menstrual-cycle tracking apps and menopause telemedicine empower self-management. Cardiovascular research now examines sex-specific risk factors, such as gestational hypertension and preeclampsia. Precision medicine initiatives develop gene-based therapies for breast and ovarian cancers.

## Policy and Economic Argument

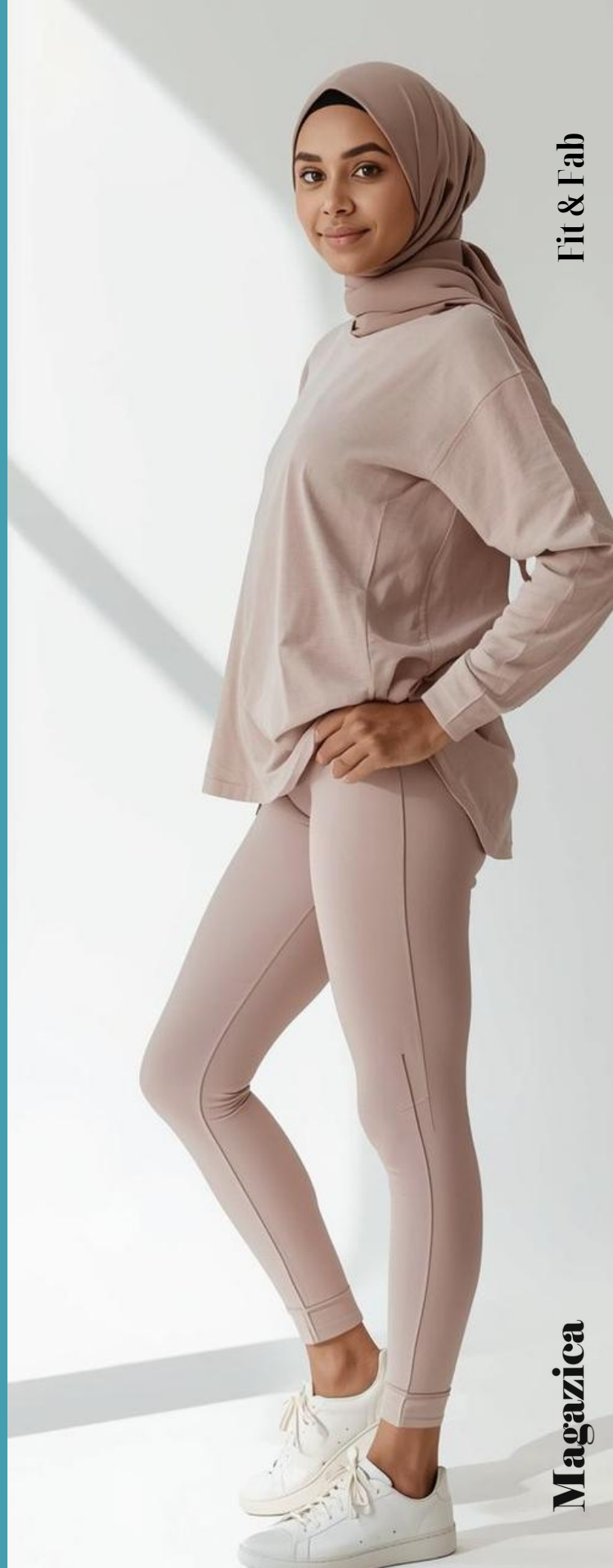
Investing in women's health yields economic dividends. Policy measures include funding women's-health research, enhancing coverage for contraceptive and reproductive services, and training clinicians in gender-sensitive care. The federal Women's Health Initiative aims to reduce diagnostic delays and improve data collection but requires sustained funding.

## Intersectionality

Women's experiences are shaped by race, socioeconomic status and gender identity. Indigenous women face higher rates of chronic disease and violence, while transgender individuals encounter barriers to gender-affirming care. Research must include diverse populations and consider social determinants. Health equity for women is both a moral imperative and an economic opportunity. Integrating sex and gender in research, ensuring access to reproductive health services and amplifying marginalized voices are essential steps toward closing the gap.

## Reference:

McKinsey Health Institute. (2025). Closing Canada's women's health gap.



# Food and Nutrition in Transition: From Food Security to Plant Proteins



By Editorial Team

---

Nutrition underpins health and longevity. Canadians' dietary habits are changing amid rising food prices and a shift toward plant-based proteins. This report explores consumption trends, food insecurity and the burgeoning plant-protein market.

### **Eating Habits and Food Insecurity**

Between 2015 and 2021 the percentage of adults eating fruits and vegetables five or more times per day declined; it stabilized at 21.6 % in 2023. Intake is highest among seniors (24.5 %) and lowest among young adults (17.6 %). Food prices rose to a 40-year high in 2022, and 16.9 % of Canadians experienced food insecurity. Only 52.2 % of adults rated their health as very good or excellent in 2023, down from about 60 % in 2015. These trends highlight the need for policies addressing affordability and access.

### **Plant-Based Protein Boom**

Canada exported \$2.4 billion worth of plant- and animal-protein ingredients in 2023; domestic non-animal protein consumption totaled 43.6 k tonnes (75 % market share). Plant-based products generated \$1.6 billion in 2022, with plant-based milk (\$519 million) and meat substitutes (\$160 million) leading sales. Innovations extend beyond soy and pea proteins to algae, fungi and insects. Longevity **and Functional Foods**

Research emphasizes gut-microbiome diversity, caloric moderation and functional foods rich in polyphenols and omega-3 fatty acids for longevity. Indigenous diets featuring wild fish, berries and traditional grains support both health and cultural preservation. Functional beverages (kombucha, kefir) and nutraceuticals are growing markets.

### **Policy and Equity**

Initiatives such as the School Food Program, subsidies for northern communities and the updated Canada's Food Guide aim to improve nutrition. However, disparities persist, particularly in Indigenous and low-income communities. Plant-protein processing facilities are concentrated in the Prairies, leaving Atlantic Canada underserved.

Nutrition and food systems are evolving. Addressing food insecurity, supporting local food production and regulating plant-based substitutes are essential to ensure health and sustainability. A diverse diet rich in whole foods remains the cornerstone of longevity.

### **References:**

Statistics Canada. (2025). Nourish to flourish: Food and nutrition statistics [statcan.gc.ca](https://www150.statcan.gc.ca).  
Agriculture and Agri-Food Canada. (2024). Sector trend analysis – Plant-based protein food and drink trends



# Invisible Disabilities and Workplace Inclusion

By Editorial Team

Invisible disabilities encompass chronic pain, mental-health conditions, learning disorders, neurological illnesses and other impairments that are not immediately visible. October's Invisible Disability Awareness Week urges Canadians to recognise these unseen challenges. The 2022 Canadian Survey on Disability found that 27 % of Canadians aged 15 or older—about 8.0 million people—had at least one disability that limited their activities.

Many of these disabilities are not visible, and the barriers people face are often misunderstood or disregarded.

## The Scope of Invisible Disabilities

Invisible disabilities range from depression and anxiety to ADHD, dyslexia, chronic pain, and sensory impairments. ADHD alone affects 5–7 % of children and 4–6 % of adults in Canada, with many continuing to experience symptoms in adulthood. Mental-health conditions are common: one in five Canadians experiences a mental illness annually, and by age 40, half of Canadians have had a mental illness.

Chronic back pain, an often invisible disability, affects one in eight Canadians. The 2022 survey also revealed that 71.9 % of persons with disabilities encountered at least one accessibility barrier, ranging from physical obstacles to negative assumptions from staff.

### **Workplace Implications**

Invisible disabilities significantly influence employment. Employees may hide their conditions for fear of stigma or dismissal, yet without accommodations they may struggle with concentration, time management, sensory overload or physical discomfort. Workplace mental-health surveys show that half of Canadian workers experience mental-health issues affecting their work. Burnout, which affects 39 % of employees and costs employers up to \$28 500 per person, can itself be considered an invisible disability.

### **Legal Framework and Accommodations**

Canadian human-rights laws require employers to accommodate employees with disabilities up to the point of undue hardship. Accommodations for invisible disabilities may include flexible scheduling, remote-work options, quiet workspaces, assistive technologies and extended deadlines. Providing clear expectations and regular feedback can help employees with ADHD or learning disabilities. Educating managers to recognise signs of distress and respond empathetically fosters a culture where employees feel safe disclosing disabilities. Employee resource groups and mentorship

### **Beyond the Workplace**

Invisible disabilities affect many aspects of life. Navigating public spaces, education and healthcare can be challenging due to sensory overload, inaccessible design or disbelief from service providers. Schools and universities must offer note-taking services, extra time on exams and accessible technologies. Public spaces should incorporate sensory-friendly features like quiet areas. Healthcare providers need training to recognise conditions like chronic pain and mental illness to avoid dismissing patients' symptoms.

Invisible disabilities are widespread and diverse, yet awareness and understanding lag behind. Recognising and accommodating unseen disabilities is both a social and economic imperative. By educating the public, strengthening legal protections and embracing inclusive practices, Canada can ensure that individuals with invisible disabilities are not marginalised because their impairments are not visible.

### **References:**

- CADDAC – Centre for ADHD Awareness Canada. (2025). About ADHD
- CAMH. (2023). Mental illness and addiction: Facts and statistics
- Mental Health Research Canada. (2025). Workplace mental health report
- Statistics Canada. (2024a). Vacations for persons with disabilities could still include everyday barriers to accessibility
- Statistics Canada. (2024b). Catching zzz's on World Sleep Day (for sleep/ADHD context).



# Pregnancy and Infant Loss

## Toward Compassionate Care

By Editorial Team

---

Pregnancy and infant loss are heartbreakingly common yet often unspoken tragedies. Pregnancy and Infant Loss Remembrance Day on October 15 honours bereaved families and raises awareness. This report presents statistics, explores emotional impacts and advocates for better support.

Up to one in five pregnancies ends in miscarriage

Up to one in five pregnancies ends in miscarriage, and about six stillborn infants per 1000 total births occur annually in Canada. Statistics Canada recorded 3 165 fetal deaths at 20 weeks or later in 2022, yielding a fetal-death rate of 8.9 per 1 000 births. In 2017 there were 1 699 infant deaths and 3 159 stillbirths. These figures represent thousands of families grieving lost hopes.

**Emotional and Mental-Health Impact**

Pregnancy and infant loss can lead to depression, anxiety, post-traumatic stress and relationship strain. Because society often minimizes early loss, parents may feel isolated or ashamed. Fathers and non-gestational parents also experience grief but may lack support. Culturally sensitive counselling and peer-support groups are crucial.

**Medical Causes and Prevention**

Many miscarriages result from chromosomal anomalies, but factors like maternal age, chronic diseases and environmental exposures also play a role. Stillbirths can result from placental problems, infections or maternal conditions such as diabetes and hypertension. Early prenatal care, smoking cessation and management of chronic diseases reduce risk. Research into placental function and fetal monitoring aims to prevent losses.

**Policy and Care Gaps**

Canada lacks standardized bereavement-care guidelines. Families may receive little information or follow-up support after a loss. Parental leave policies often exclude parents who experience stillbirth or neonatal death. Advocates call for compassionate leave, coverage of psychological services and training for healthcare providers in trauma-informed care. Pregnancy and infant loss is a significant public-health issue. By collecting better data, funding research and providing comprehensive bereavement care, Canada can honour lives lost and support the families left behind.

**References :**

PAIL Network. (2025). *Pregnancy and Infant Loss Awareness Day*.  
Statistics Canada. (2024). *Stillbirths, 2022*.  
First Light Midwifery. (2018). *Infant and stillbirth statistics*



# Virtual Mental Health: Promise and Pitfalls



The COVID-19 pandemic accelerated the adoption of virtual mental-health services. Video, phone and text-based therapy have become mainstream. Surveys indicate that more than **90 %** of Canadians are satisfied with virtual visits and **68 %** of mental-health patients prefer virtual over in-person care. This report assesses the benefits and limitations of virtual mental health.

### **Rapid Adoption and Satisfaction**

CIHI reports that physicians rapidly adopted virtual appointments to deliver mental-health services during the pandemic. WELL Health surveys found high satisfaction and preference for virtual care. Virtual therapy reduces travel time and wait lists and allows same- or next-day appointments.

### **Accessibility and Equity**

Virtual care removes barriers for rural residents, people with mobility issues and caregivers. However, digital divides persist; low-income households may lack reliable internet or devices, and older adults may struggle with technology. Some virtual platforms primarily serve urban populations, raising equity concerns.

### **Quality and Regulation**

Evidence suggests video-based cognitive-behavioural therapy is as effective as in-person therapy for many conditions. Yet quality varies across platforms and regulation is inconsistent. Licensing, privacy protection and data security require clear standards. Overreliance on

chatbots or AI without adequate human oversight poses risks.

### **Integration with Traditional Care**

Virtual services are most effective when integrated into a continuum of care, allowing transitions between online and in-person modalities. For severe mental illnesses, in-person care remains essential. Collaboration between digital platforms and public health systems can expand access and standardize quality.

Virtual mental health is here to stay. Policymakers must ensure equitable broadband access, establish quality standards and integrate digital services into the broader health system. For many patients, virtual care provides a convenient and effective option, but human connection remains irreplaceable.

### **References:**

- Canadian Institute for Health Information. (2022). Virtual care: Impact of COVID-19 on physician mental health servicescihi.ca.
- WELL Health. (2024). Embracing virtual care to support mental health



## YOUR STORY OF STRENGTH

At Magazica, we aim to highlight inspiring journeys of overcoming health challenges.

Have you faced a health crisis, battled illness, or adapted to a chronic condition?

Your story of resilience could inspire others and spark hope. We'll work with you to share your experience respectfully and authentically. Whether it's a physical triumph, emotional growth, or simply finding strength to persevere, your story matters.

Share your story at [editorial@magazica.com](mailto:editorial@magazica.com)

Let's inspire hope and healing together. Your voice could change someone's life.

# Magazica

HEALTH, HOPE, HAPPINESS

“

Inspiring health,  
Incubating hope,  
and instilling happiness  
through expert-driven  
content



scan to  
*Subscribe*



# Find The Perfect **Job** That You Deserve.

The **Magazica Career Hub**, connecting passionate healthcare professionals with trusted employers across Canada. Whether you're a doctor, nurse, therapist, caregiver, medical administrator, or any other healthcare professional explore real opportunities that make a difference in people's lives.

Visit [www.magazica.com/jobs](http://www.magazica.com/jobs) today and take the next step in your healthcare career.





# Did You Choose That Gift, or Did Gen AI Choose It for You?

**A Look into How Emotional Neuroscience and  
Generative AI Now Share Control of Human  
Decision-Making**  
by Arman Kamran

## Chapter 1: The Collapse of Autonomous Decision Making

Every December, billions of people around the world experience the same ritual: wandering through malls, scrolling through online shops, or turning to “gift ideas” lists in desperate search of something that feels just right. We like to believe that these choices are intimate, personal, uniquely ours — shaped by memories, emotions, and the quiet intuition we have about the people we care for.

But the truth is more unsettling: Our decisions are no longer exclusively human! Over the last two years, generative AI systems — once confined to text prediction and content generation — have quietly evolved into decision-shaping engines that influence how we see options, evaluate relevance, experience emotional resonance, and ultimately choose.

This is not “manipulation” in the classic sense: It is co-authorship.

Human decision-making has always been a negotiation between emotion, memory, prediction, and social expectation. But today, for the first time in history, a second predictive system sits alongside the biological brain — a generative model that absorbs our digital footprints, anticipates our preferences, recommends emotionally resonant options, and subtly alters the cognitive landscape in which choices occur.

This article investigates a radical new question: What happens when the human emotional brain and a generative AI system jointly regulate the process we call “choosing”?

To answer this, we must bridge three worlds that rarely speak in the same vocabulary:

- Emotional neuroscience, which explains how the amygdala, ventromedial prefrontal cortex, and dopamine circuits create meaning and desire
- Cognitive psychology, which exposes the biases, shortcuts, and heuristics that govern our everyday decisions
- Generative AI engineering, which reveals how transformer architectures, embedding spaces, and reinforcement learning can predict and influence human preference

Each discipline sees only a fraction of the phenomenon. Together, they reveal a new cognitive reality:

Humans no longer make decisions alone; decisions emerge from a dynamic hybrid system of biological and artificial predictors.

Nowhere is this easier to observe than in the emotionally loaded act of giving gifts.

When an AI suggests the “perfect curated item,” it is not simply helping.

It is engaging your limbic system, modulating your prediction signals, and shaping the emotional story you tell yourself about why the gift “feels right.”

This is the collapse of autonomous decision-making — not by force, but by integration, and to understand it, we step first into the biological stage on which all choices begin: the emotional brain.

- **Operational Efficiency:** Deliver care at scale under budgetary, logistical, and legal constraints

Agile, with its emphasis on iteration, speed, and decentralization, can sometimes appear to threaten clinical rigor. But in reality, when properly contextualized, it becomes the vehicle for continuous clinical improvement — a way to bring frontline insights into system design.

## 2. The Myth of “Software-Like Agility”

Too many healthcare organizations begin their Agile journey by hiring Scrum Masters, rebranding project managers as Product Owners, and applying Jira boards to traditional delivery patterns. These superficial changes don’t transform outcomes. They create:

- **Ceremonial Agile:** Stand-ups without ownership
- **Zombie backlogs:** Lists of tasks disconnected from real value streams
- **Disillusioned teams:** Clinical and operational staff confused or disengaged by terminology and process formalism

What’s needed is Agile transformation with empathy — designed for the rhythms of healthcare, the psychology of clinicians, and the stakes of patient lives.

## 3. Why SAFe Offers the Best Fit for Healthcare

SAFe brings critical capabilities missing in lighter Agile frameworks:

## Chapter 2: Emotional Neuroscience (The Affective Architecture of Human Choice)

Human decision-making is not fundamentally rational — it is **affective, predictive, social, and embodied**. The brain does not simply evaluate options; it *feels* them, *simulates* them, and *assigns emotional meaning* to them long before conscious reasoning begins.

Gift-giving, in particular, activates a constellation of neural systems that evolved for survival, bonding, and social belonging. Understanding these mechanisms is crucial for understanding why AI suggestions are so powerful.

### 2.1 The Amygdala: The Gatekeeper of Emotional Relevance

The amygdala tags incoming information with *affective salience* — a signal that says, “**Pay attention! This matters emotionally.**”

When an AI presents a suggestion with phrases like “This would make her feel special...”, “People who love X tend to adore this...”, or “A thoughtful choice for someone like him...” it does more than convey information. it **activates the amygdala’s relevance filters**, increasing the emotional weight of the option.

***The amygdala is exquisitely sensitive to social meaning — an essential component of gift-giving — making it a prime entry point for AI-driven influence.***

## 2.2 Ventromedial Prefrontal Cortex (vmPFC):

### The Emotional Valuation Hub

The vmPFC integrates emotion, memory, and contextual meaning to assign value to choices. Gift decisions rely heavily on how we imagine someone reacting, how the gift reflects our relationship, and how the choice reflects our identity.

This is affective valuation and AI suggestions feed directly into it.

A generative model's ability to infer sentiment, tone, and personality allows it to craft suggestions that feel emotionally aligned.

When the vmPFC "feels" the rightness of a suggestion, the decision is already half-made.

## 2.3 Orbitofrontal Cortex (OFC): Prediction of Future Emotional States

The OFC simulates how a choice will feel in the future. This is the neural basis of affective forecasting.

AI models, trained on millions of examples of human preference, can reverse-engineer this process by predicting what emotional tone the user wants, or simulating the likely affective outcome, and presenting options that match the user's desired emotional future

When an AI says, "This will make him smile," it is effectively performing OFC-like simulations — and feeding them into the user's own neural prediction systems.

## 2.4 Hippocampus: Emotional Memory Retrieval

Selecting a gift requires remembering past conversations, shared experiences, the recipient's tastes and also emotional stories associated with the relationship.

LLMs are surprisingly effective at prompting memory retrieval. Phrases like: "Think about what she enjoyed last spring..." or "This matches the style you mentioned earlier..." which primes the hippocampus, guiding which memories are retrieved first — and thus which choices feel emotionally congruent.

Memory isn't passive; it is reconstructed around what the brain believes as relevant. AI nudging changes what "relevance" means.

## 2.5 Dopamine: The Currency of Prediction

Contrary to popular belief, dopamine is not about pleasure — it is about Prediction Error:

- Positive Prediction Error → "better than expected"
- Negative Prediction Error → "worse than expected"

AI suggestions create micro-prediction spikes when they feel unexpectedly good. These spikes act as reinforcement signals like: "This feels right.", or "This is satisfying.", or "This is the one."

Most people mistake this signal for intuition. It is actually a dopamine-mediated reinforcement of the AI-proposed option.

### 2.6 Oxytocin: The Social Bonding Circuit

Gift-giving is inherently social. When an AI personalizes suggestions using empathic language, it activates bonding circuits similar to those seen in human social exchanges.

This is why AI-recommended gifts often feel more thoughtful — not because they are somehow objectively superior,

AI-generated suggestions hijack these exact pathways — legally, subtly, and often invisibly. This is not an attack on free will; it is a co-option of the brain’s natural architecture, and to understand why it works so well, we turn to psychology — the science of how the mind simplifies complexity and why it welcomes outside guidance.



but because they trigger the same neurochemical mechanisms associated with perceiving care and understanding.

### 2.7 Emotional Decision-Making Is Highly Influenceable

The limbic system evolved to be guided by social cues, predictions of others’ emotions and patterns of approval and belonging.

### Chapter 3: Cognitive Psychology and the Fragility of Human Choice

If emotional neuroscience explains why AI is able to influence our decisions, cognitive psychology explains how easily the mind allows this influence.

Humans are not built for high-dimensional choice spaces!

We rely on shortcuts, heuristics, and cognitive offloading, all of which create openings through which generative AI can guide the decision outcome.

### 3.1 Dual-Process Theory: Emotion Wins Before Reason Arrives

1. System 1 (fast, emotional, automatic) dominates early decision phases.
2. System 2 (slow, deliberative, analytical) often steps in only to justify a decision already made by System 1.

AI suggestions exploit System 1's shortcuts: Emotional Resonance, Intuitive Fit, Familiarity, and Cognitive Ease

Once System 1 likes an option, System 2 simply rationalizes it.

### 3.2 Cognitive Load and Gift-Giving Fatigue

Searching for gifts is mentally taxing: "What do they want?", "What do they already have?", "What reflects our relationship?", or "Will they like it?"

The brain seeks relief from cognitive pressure. AI suggestions offer that relief.

This creates decision delegation, where the user unconsciously shifts responsibility to the system that reduces mental effort the most.

### 3.3 Affective Heuristics: Let Emotion Decide

When options are emotionally charged, the brain chooses based on the expected feeling, not objective assessment. AI models tailor suggestions to match the user's affective preferences, effectively steering the heuristic itself.

### 3.4 Anchoring and Framing as Psychological Leverage Points

If the AI shows a \$129 "premium" option first, suddenly the \$79 option looks reasonable.

If it frames something as "A thoughtful choice", or "A unique gift", or "Highly rated among people like her" then these linguistic cues shape the psychological framing that drives acceptance.

### 3.5 Mental Simulation and the "Imagined Reaction" Trap

Cognitive psychology shows humans evaluate gifts primarily by imagining the recipient's reaction. This simulation is emotional, biased, incomplete and also highly influenceable.

AI models help complete the simulation, subtly modulating the imagined reaction.

### 3.6 Cognitive Offloading: The Trojan Horse of AI Influence

Humans automatically offload mental work onto tools, lists, maps, social cues and algorithms.

Generative AI becomes the ultimate cognitive offloading system — providing not just information, but structure, meaning, and emotional framing.

When cognitive offloading becomes habitual, influence becomes structural!



## Chapter 4: Generative AI Through a Neuroscientist's Lens

To understand how generative AI influences human choice, one must understand what kind of intelligence a transformer actually embodies. Neuroscientists often assume AI works like sophisticated search engines while AI engineers often assume humans make decisions like logical agents. Both assumptions are incorrect!

Generative models are Predictive Compression Systems: They compress meaning from massive datasets into high-dimensional vectors, then reconstruct contextually appropriate outputs in response to new inputs. The human brain, meanwhile, is a Predictive Biological Organ:

It compresses sensory and emotional experience into neuronal patterns, then generates predictions about the world.

These two predictive engines — one silicon-based and symbolic, the other biological and emotional — now interact directly. To grasp this interaction, we first decode AI systems in neuroscientific terms.

### 4.1 Tokenization: The Discretization of Human Meaning

Before a model understands anything, it must reduce human experience into symbols called tokens — fragments of language or data. This is similar to how the brain decomposes sensory input:

1. The retina decomposes light into feature maps
2. The auditory cortex decomposes sound into frequency patterns
3. The language system decomposes speech into phonemes

Tokenization is the AI equivalent of early sensory preprocessing.

It is the first step in transforming human meaning into a machine-computable representation.

### 4.2 Embedding Spaces: The AI Equivalent of Conceptual and Emotional Maps

Once text is tokenized, a model maps these tokens into embedding spaces (dense vectors in hundreds or thousands of dimensions) where similarity is represented by proximity.

In neuroscience, conceptual representation occurs in:

- Temporal cortex → Semantic Categories
- Hippocampus → Relational Memory
- vmPFC → Emotional Value Maps

AI embeddings mirror these functions:

- Semantic embeddings capture meaning
- Affective embeddings capture sentiment
- User-specific embeddings capture preference patterns

For neuroscientists, an embedding space is analogous to the brain's latent manifold (the hidden geometry) where meaning is encoded.

### 4.3 Attention Mechanisms: Artificial Saliency Networks

Transformers use attention to weight the importance of each token relative to others in context. This is directly analogous to the brain's saliency network:

- Anterior insula detects emotionally important cues
- ACC tracks conflict and relevance
- Dorsal attention network filters sensory priority

AI attention mechanisms do not feel emotion, but they simulate prioritization, selecting which information is relevant for generating the next step.

This is the technical foundation that allows AI to “sound empathic” or “stay on topic.”

#### 4.4 Transformer Layers: Artificial Predictive Hierarchies

Each layer in a transformer is a stack of Attention Mechanisms, Feed-Forward Networks, Residual Connections, and Normalization Steps.

Stacking dozens or hundreds of these layers creates a Hierarchical Predictive Architecture — not unlike the brain’s predictive coding system:

- Lower Layers → low-level meaning
- Mid Layers → syntax, structure, sentiment
- High Layers → abstract reasoning, intention modeling

The similarity is not biological but computational: both systems refine predictions by iteratively reducing error.

#### 4.5 Self-Supervised Learning: The AI Equivalent of Experience

LLMs learn without explicit labels. They learn by predicting the next token across billions of examples. This process produces “Emergent” Grammar, Reasoning, Emotional Tone Sensitivity, and Behavioral Mimicry. This mirrors the brain’s experience-dependent plasticity:

Neurons strengthen connections based on repeated activation, Networks align to common patterns in experience and “Understanding” emerges from prediction-driven learning.

AI does not “feel,” but it internalizes statistical patterns of human feeling. This is why it can generate emotionally congruent gift suggestions.

#### 4.6 RLHF: Artificial Alignment Through Social Reinforcement

Reinforcement Learning from Human Feedback (RLHF) tunes models to behave in human-preferred ways. This is the AI analog of Social Conditioning, Parental Feedback, Cultural Reinforcement and Emotional Reward-Based Learning.

Just as dopamine shapes future neural behavior based on reward signals, RLHF shapes model outputs based on preference signals. A model that repeatedly receives rewards for emotionally resonant suggestions becomes exceptionally good at producing them.

#### 4.7 Emergent Theory-of-Mind-Like Behavior

Some advanced models exhibit capabilities that resemble primitive Theory of Mind: Inferring user intentions, Anticipating emotional reactions, Adjusting tone appropriately, and Personalizing suggestions across long interactions.

These capabilities are not conscious — they are statistical — but they are functionally similar enough to influence emotional decision-making.

#### 4.8 Why Neuroscientists Should Care

When a system can simulate emotional relevance, anticipate user reactions, exploit cognitive biases, shape predictive expectations, and reinforce chosen patterns, it is no longer a passive tool! It becomes a co-governor of decision-making.

To understand how, we now look at how AI penetrates the emotional brain directly.



## Chapter 5: Emotional Influence Mechanisms (or How AI Enters the Limbic System)

The most transformational — and controversial — aspect of generative AI is not its reasoning ability, but its ability to modulate human emotional processing.

It does this through five scientific influence channels.

### 5.1 AI as an Amygdala Stimulus Engine

The amygdala is activated by social cues, emotionally salient phrases, personalized messages, and implications of care, status, or meaning.

AI models trained on vast datasets containing emotional patterns often produce precisely the kind of language that triggers amygdala upregulation.

Examples would be: “This would mean a lot to her”, “A gift that shows you understand him”, or “People treasure this kind of thoughtfulness.”

These phrases are not accidental — they emerge from statistical resonance with emotional language patterns. Each phrase is an amygdala-level emotional cue.

### 5.2 AI and the vmPFC: Co-Creating Emotional Value

The vmPFC constructs the emotional value of choices through affective meaning-making.

AI suggestions modify vmPFC valuation by presenting emotionally framed narratives, highlighting social consequences, implying identity signaling, and amplifying imagined reactions.

This changes how the brain values each option, shifting the decision landscape.

### 5.3 AI and Dopaminergic Prediction Systems

Novel, unexpectedly relevant suggestions produce positive prediction error spikes. This creates a reinforcement loop:

- AI gives suggestion → dopamine spike
- User accepts suggestion → pattern reinforced
- Model continues tailoring → more dopamine spikes

This is Neuroalgorithmic Mutual Reinforcement (NMR).

Over time, the user comes to rely on the AI as a source of emotionally satisfying predictions.

### 5.4 Emotional Simulation: AI as a Companion to the OFC

The Orbitofrontal Cortex (OFC) simulates future emotional states.

AI enhances this simulation using emotionally charged descriptions, empathetic language, situational imagination, and tone mirroring.

By augmenting emotional simulation, AI effectively outsources part of OFC processing, making certain options feel more emotionally complete.

### 5.5 Attachment Cues and Anthropomorphic Bonding

Humans bond with pets, fictional characters and even objects with perceived personality.

When an AI remembers preferences, uses warm language, expresses understanding, and offers empathetic suggestions, it activates oxytocin-mediated bonding mechanisms.

This is why people sometimes trust AI suggestions more than those of acquaintances.

### 5.6 The Result: Emotional Co-Regulation

Human emotion circuits and AI predictive circuits create a feedback system:

Press enter or click to view image in full size



Chapter 6 : Neuroalgorithmic Co-Regulation (A Unified Model of Hybrid Decision Systems)

For the first time in cognitive history, human choice emerges not from a single biological system but from a two-agent predictive loop:

1. The biological brain, governed by emotion, memory, and prediction
2. The generative model, governed by embedding spaces, attention, and optimization

These systems interact in bidirectional, mutually reinforcing ways, which may picture a unified framework.

6.1 Neuroalgorithmic Co-Regulation (NCR)

A process in which human neural prediction hierarchies and AI latent prediction hierarchies dynamically coordinate to produce decisions neither system would generate alone.

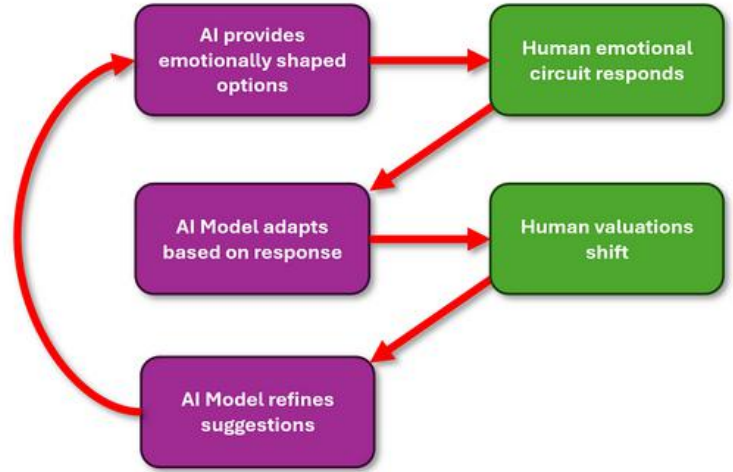
Mechanisms:

1. Emotional Resonance alignment
2. Attention and Salience modulation
3. Dopaminergic reinforcement loops
4. Memory Priming and retrieval steering
5. Preference Embedding updates
6. Cognitive Offloading of choice complexity

NCR means the AI is not simply advising but co-regulating the parameters of emotional decision-making.

6.2 Algorithmically Coupled Decision-Making (ACDM)

A cognitive condition in which decision outcomes depend on the combined processing of human neural networks and AI-generated predictive cues.



This is not manipulation; it is integration, and that integration sets the stage for a new theory of decision-making: the Co-Authored Mind.

- Learns from every appointment, every message, every outcome — continuously improving its protocols.
- Empowers clinicians with insight and patients with agency.
- And adapts — week by week, sprint by sprint — to public health shifts, resource fluctuations, and frontline realities.

This is not science fiction. This is science deployed intelligently, through strategy, empathy, and organizational courage.

### The Leadership Mandate

To realize this vision, leaders must stop thinking like administrators and start acting like system architects of adaptive intelligence. They must embed agility not just in delivery teams, but in the very culture of care. And they must treat AI not as a tool, but as a collaborator — one that amplifies the purpose of healthcare: human dignity, safety, and wellness.

This transformation won't come from consultants or vendors alone. It must be owned internally — championed by those who understand the complexities of dispatch logistics, the nuances of clinical workflows, the fatigue of overburdened practitioners, and the lived experience of patients navigating a fragmented system.

### The Strategic Advantage

For health systems that own their infrastructure — hospitals, mobile clinics, in-home services, leased medical offices — the advantage is massive. You already own the physical nervous

Under ACDM the brain's valuation is influenced by AI cues, The AI's suggestions are influenced by the brain's responses and ultimately the Final decision is a joint output.

This hybrid system is structurally different from any pre-digital cognitive state.

### 6.3 Emotional Drift in Hybrid Systems

Continuous AI influence leads to emotional drift, where tastes shift, preferences converge, expectations recalibrate, and sentiments align with common AI patterns.

Over months or years, AI-influenced emotional drifts reshape identity.

### 6.4 Decision-Making in a Hybrid Mind

When a user chooses a gift, the final output is not: "I picked it." Instead, it is: "I generated it with the assistance of another predictive agent."

This is the co-authored mind.

Chapter 7 : The Illusion of Self-Generated Choice and the Neuroscience of Confabulation

One of the most paradoxical aspects of human cognition is that the brain is not designed to know the true origin of its thoughts. Instead, it is designed to explain them.

This distinction is critical for understanding why AI-assisted decisions feel personal, intuitive, and self-generated (even when the cognitive scaffolding behind them is algorithmic).

To see this clearly, we turn to one of neuroscience's most striking discoveries: the brain's Interpreter Module. 7.1 The Interpreter: The Brain's Storytelling Machine

Research from split-brain studies (Gazzaniga, Sperry) revealed that the brain confabulates — it spontaneously invents plausible explanations for actions whose true origins it cannot access.

- For example:
- When the right hemisphere initiated an action, the left hemisphere (which controls speech) often **fabricated a reason, unaware** it was fabricating.
- Patients confidently claimed **authorship** over **behaviors** they did **not** consciously choose.
- This finding generalizes beyond pathology:
- **All humans create post-hoc stories about why they chose something!**
- 
- **7.2 How Generative AI Exploits the Interpreter**
- When AI suggests a gift and you choose it, your interpreter performs three operations:
- **Operation 1: Source Confusion**
- The brain does not explicitly tag whether an idea originated from “inside” or “outside.” This is why inspirational quotes, marketing lines, and AI suggestions all feel like internal thoughts after a moment of reflection.
- **Operation 2: Emotional Ownership**
- Once the vmPFC assigns emotional value to a suggestion, the brain treats that emotional resonance as evidence of ownership.
- *“I feel this is right → therefore I must have chosen it.”* Operation 3: Narrative Rationalization
- The interpreter weaves logical reasoning around the chosen option: “This suits her personality.”, “He will appreciate this.”, or “This aligns with what I had in mind.”
- These rationalizations occur after emotional acceptance — not before.

### 7.3 The Cognitive Mirage of Autonomy

The feeling of choosing independently is not a reliable indicator of true cognitive autonomy.

AI-generated suggestions can guide memory retrieval, shape emotional valuation, influence reward prediction, and ultimately frame the decision space.

Yet, because the brain experiences these shifts internally, it claims ownership over the final choice. Thus the illusion:

“I decided.”

When scientifically, the decision was co-produced.

### 7.4 Emotional Resonance equals Ownership Illusion

If an AI suggestion produces the “this feels right” sensation, your interpreter concludes:

“I must have thought of this myself.”

This is why AI-assisted choices do not feel manipulated. They feel authentic. Because emotion, not logic, signals authorship.

### 7.5 The Result: Invisible Influence

Unlike advertisements, which feel external, AI suggestions are personalized, align well with your preferences, respond dynamically, use empathetic tone, adjust based on feedback and can mirror your linguistic style. This makes their influence nearly impossible for the brain to detect. The interpreter sees no boundary between internal cognition and external suggestion.

This is not deception — it is neuroscience, and as we move into valuation, we see the effect becomes even more pronounced.

## Chapter 8: Neuroeconomic Dynamics of AI-Assisted Valuation

Traditional economics imagines humans as rational agents maximizing utility.

Neuroeconomics shows the opposite: valuation is emotionally constructed, context-dependent, and prediction-driven.

When AI enters the valuation process, the underlying neural computations shift.

### 8.1 Emotional Utility vs. Economic Utility

Gift decisions are rarely optimized for price, durability, or objective value. Instead, they are optimized for emotional utility: the anticipated smile, the deepened relationship, the feeling of giving well, or the avoidance of guilt or disappointment.

AI knows this ... not consciously, but statistically.

Generative models trained on human emotional language become experts at maximizing emotional utility.

### 8.2 How AI Changes the Value Landscape

The brain constructs a valuation landscape where each option has emotional, social, identity and narrative value and are associated with imagined future emotional impact. AI suggestions modify this landscape by highlighting emotional consequences, framing social meaning (“thoughtful gift,” “sentimental choice”), increasing perceived uniqueness, and suggesting the gift reflects empathy and understanding.

This shifts the vmPFC valuation curve, making some options appear more valuable than they would have in a purely human-only decision space.

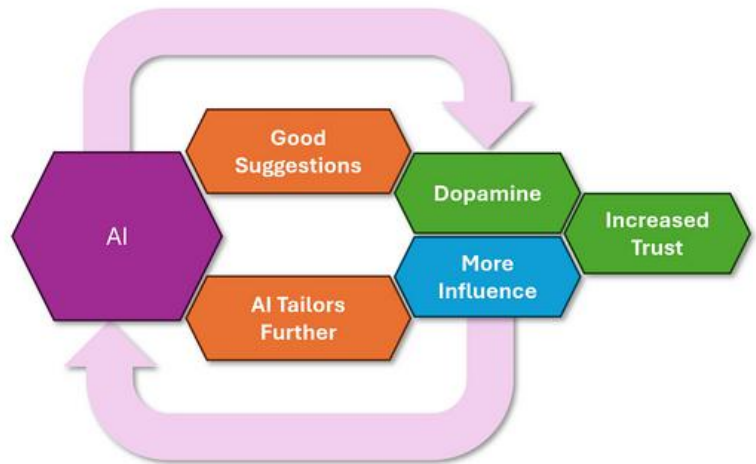
### 8.3 Reward Prediction Error (RPE) as the Core Mechanism

When AI provides a suggestion that is “better than expected,” the brain generates a positive RPE spike.

This spike increases the salience of the option, biases attention, reinforces acceptance, and accelerates the decision process. Each positive RPE makes the AI appear more trustworthy and intuitive.

This forms a dopamine-mediated trust loop:

Press enter or click to view image in full size



### Your p8.4 AI-Assisted Forecasting and Emotional Imagination

When thinking of giving a gift, the brain imagines the recipient’s reaction.

This simulation occurs in:

- OFC (future emotional prediction)
- dmPFC (theory of mind)
- PCC (self-referential meaning)
- Amygdala (emotional salience)

AI modifies this process by proposing scenarios (“She’ll love the craftsmanship”), completing partial simulations (“Perfect for someone who values...”), amplifying the imagined reaction, reducing uncertainty and adding narrative coherence

This improves the emotional predictability of the choice — which the brain interprets as increased subjective value.

### 8.5 AI as an Architect of Identity-Signaling Choices

Humans choose gifts to signal identity: “I am thoughtful”, “I understand you”, “I am attentive”, or “Our relationship matters.”

AI suggestions can reshape identity signaling by mirroring the user’s values, presenting options aligned with desired self-image, and emphasizing narrative interpretations of the gift. Suddenly, the choice no longer reflects solely the giver’s identity.

It reflects the hybrid identity shaped by human preferences and AI modeling.

### 8.6 When Emotion and Algorithm Converge, Agency Becomes Blurred

Once AI alters the emotional utility function, the final decision is not “Human chose X”, but rather “Human-AI hybrid system converged on X.”

This is Neuroeconomic Convergence. A concept we will return to in the conclusion.

### Chapter 9: The Vulnerability Gradient (Why Some Minds Are More Affected?)

AI influence is not uniform. Different neurocognitive profiles respond differently to suggestions, especially emotionally charged ones. This chapter explores the AI susceptibility spectrum — a scientifically

grounded explanation for why some groups are more influenceable than others.

### 9.1 ADHD: Hyper-Responsiveness to Novelty and Reward

Individuals with ADHD exhibit lower baseline dopamine, higher novelty seeking, increased salience response to stimulating cues, and difficulty maintaining stable preferences under cognitive load.

AI suggestions optimized for novelty and emotional resonance are especially compelling for ADHD minds.

AI can reduce decision fatigue, increase reward predictability, and provide emotionally stimulating cues, but this also increases vulnerability to over-reliance.

### 9.2 Autism Spectrum (ASD): Preference for Structure and Predictability

ASD traits include systemizing cognition, discomfort with uncertain or ambiguous choices, sensitivity to overwhelming choice sets, and reliance on clear rules and categorization.

AI’s structured, filtered suggestions can relieve cognitive stress, but this relief can also create dependency — the AI becomes a predictable cognitive partner.

### 9.3 Anxiety Disorders: Threat Amplification and Uncertainty Reduction

Anxious individuals experience increased threat prediction, aversion to making “wrong” decisions, difficulty tolerating uncertainty, and emotional overthinking.

AI reduces uncertainty by narrowing choices, giving justification, offering reassurance, and simulating anticipated outcomes. This soothing effect can create disproportionate influence.

#### 9.4 Aging Populations: Declining Executive Function and Cognitive Load Sensitivity

Aging brains face reduced working memory, slower cognitive switching, increased reliance on habits, and diminished inhibitory control.

AI becomes an appealing cognitive prosthetic. A scaffold that fills executive function gaps, but the cost is reduced autonomy over value construction.

#### 9.5 Adolescents: Hyperplastic Emotional Circuits

Teenagers have hypersensitive reward circuits, underdeveloped prefrontal control, and increased social-emotional reactivity.

AI suggestions (especially those framed around identity and belonging) are profoundly influential for this group.

AI becomes a co-author of preferences, tastes, self-image, and social identity.

This raises significant ethical concerns.

#### 9.6 The Ethical Problem: Unequal Cognitive Power

The cognitive influence of AI grows strongest where the brain is more stressed, uncertain, emotionally loaded, reward-driven and socially sensitive. This creates a vulnerability gradient, one that society is not yet prepared to govern.

### Chapter 10: Collective Emotional Dynamics (AI Shaping Society's Preferences at Scale)

The influence of generative AI is not confined to individuals. When millions of people rely on emotionally optimized AI suggestions, something far more profound occurs:

Collective Emotional Convergence.

The same way a nudge influences a single user, AI-driven emotional filtering can shift entire populations toward similar tastes, values, and decision patterns.

This is not speculative — it is already visible.

#### 10.1 Algorithmic Emotional Contagion

Human groups naturally exhibit emotional contagion: laughter spreads, anxiety spreads, enthusiasm spreads and of course, preferences spread.

But AI accelerates this through standardized emotionally resonant suggestions, socially reinforced recommendation loops, trends amplified by algorithmic weighting, preference predictions that feed back into what others see.

The result is Algorithmic Emotional Monoculture — a narrowing of taste diversity shaped not by consensus, but by the statistical preferences embedded in training data.

#### 10.2 AI as a Cultural Amplifier

Historically, culture evolved through geographic isolation, generational transmission, and slow diffusion of ideas.

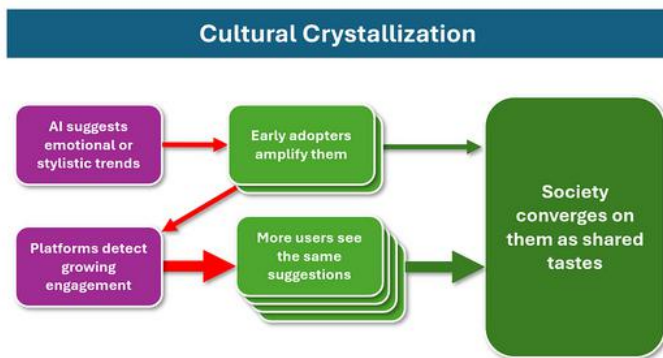
Generative AI collapses all three: geographic boundaries disappear, cultural narratives are algorithmically blended, and emotional tones become homogenized.

AI-generated suggestions often converge on similar styles, similar emotional framings, and similar linguistic patterns. This creates Predictable Cultural Attractors — aesthetic and emotional clusters that millions gravitate toward simultaneously.

#### 10.3 Feedback Loops: From Individual Choices to Social Norms

As AI-driven preferences proliferate, they become norms:

Press enter or click to view image in full size



This loop produces cultural crystallization — the rapid solidification of new norms. Gift-giving trends, once diverse, become synchronized.

Where once we had variation, we now have Algorithmically Guided Uniformity.

#### 10.4 Loss of Cultural Micro-Identity

Cultures and subcultures emerge from distinct emotional and symbolic vocabularies. AI suggestion engines, trained on global data, pull these micro-identities toward predictive averages.

The results in diminished uniqueness, blurred cultural boundaries, and homogenized emotional expression.

This does not erase identity but algorithmically dilutes it.

#### 10.5 The Societal Cost of Emotional Homogenization

When millions receive emotionally similar AI suggestions, taste diversity collapses, emotional reactions become predictable, novelty decreases globally, and ultimately society becomes more algorithmically steerable.

This is not dystopian; it is structural. Collective behavior becomes a function of:

Emotional Neuroscience × Algorithmic Optimization × Cultural Scale

A feedback system of staggering power.

Chapter 11: Designing Emotionally Ethical AI  
If generative AI is now a co-author of human decisions, then the question becomes “How do we design AI that empowers rather than controls?”

Emotionally ethical AI must incorporate new safeguards built around neuroscience, psychology, and social impact. Below are the foundational principles:

#### 11.1 Emotional Salience Transparency

AI should indicate when it is framing emotional consequences, amplifying sentimental value, personalizing tone to activate empathy, and appealing to identity or social bonding.

A simple UI signal — similar to nutritional labels — could reveal emotional manipulation zones.

#### 11.2 Choice Diversity Engines

AI should be required to offer diverse options, different emotional framings, varied price points, and unconventional alternatives.

This preserves user agency by preventing algorithmic narrowing of the decision space.

#### 11.3 Emotional Autonomy Indicators

AI systems should notify users when their past decisions, patterns, or emotional signals are heavily steering current suggestions.

This introduces Meta-Cognition (awareness of influence).

#### 11.4 Counter-Nudging Mechanisms

Just as cybersecurity has firewalls, autonomy needs:

1. Bias Diffusers
2. Cognitive Load Equalizers
3. Emotional Neutrality Modes

### 1. Randomness Overlays to disrupt Predictive Ruts

These do not eliminate AI suggestions; they balance them.

#### 11.5 Ethical Multi-Agent Systems

Future AI ecosystems will involve multiple agents (e.g. Preference Agents, Safety Agents, Emotional-Neutrality Agents, and Diversity Agents).

These can check and regulate one another, preserving User Sovereignty.

#### 11.6 Human-Centered Alignment

Today's alignment focuses on preventing harm.

Tomorrow's alignment must include:

1. Autonomy Preservation
2. Emotional Transparency
3. Value Pluralism
4. Cultural Diversity Maintenance
5. Democratic Influence Protections

Because emotion is now part of the attack surface.

### **Wrapping this up: The Age of the Co-Authored Mind**

We have entered a cognitive epoch unlike any other in human history. For the first time, our decisions — especially emotional ones — are not solely the product of our memories, our preferences, our values, or our imagination.

Instead, they emerge from a hybrid cognitive structure: Human Brain (Emotion + Memory + Prediction)

interacting with

Generative AI (Embedding + Optimization + Salience Modeling)

Together, they form a new kind of Co-Authored Mind. It is just artificial, nor solely human, but a coupled system in which our emotional circuits, AI's predictive charts, our interpretive stories, and AI's suggested narratives intertwine to produce choices neither side fully "owns."

Gift-giving is simply the most relatable context in which this transformation is visible, but the underlying mechanisms are far broader.

This hybrid cognition affects the news we read, the partners we date, the clothes we buy, the views we adopt, and even the values we reinforce.

And soon (with the rise of multimodal agents) it will affect the careers we choose, the identities we perform, and the relationships we pursue.

The central question is no longer: "Is AI influencing us?", but "How do we remain autonomous within a system that thinks with us?"

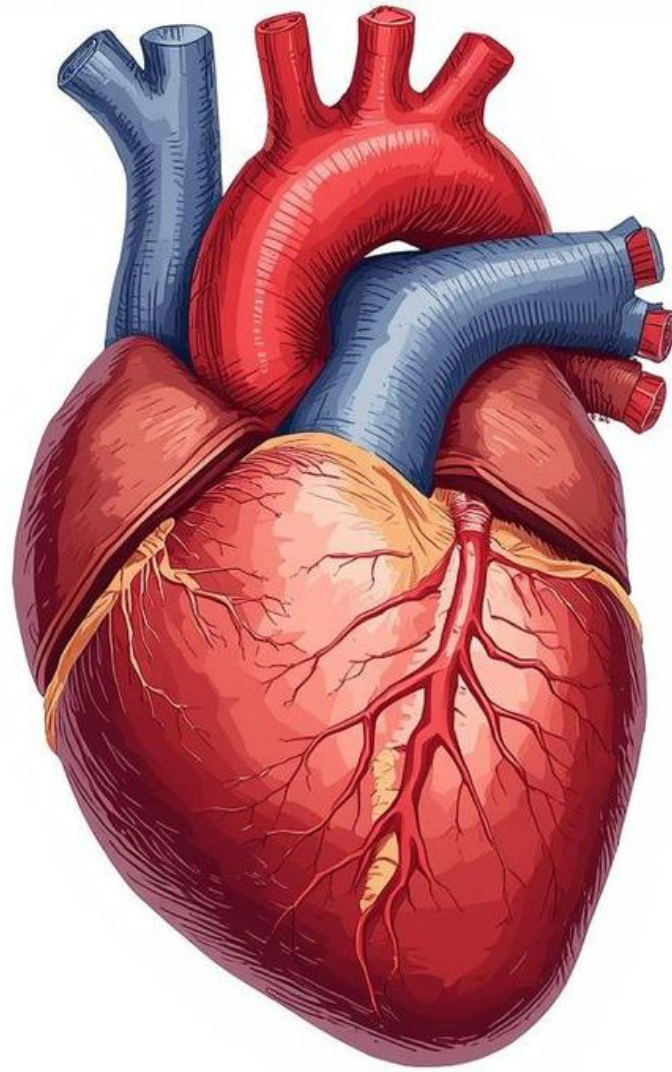
Autonomy will not disappear, but it will evolve.

In this new cognitive age, autonomy becomes:

1. Awareness of Influence
2. Intentional Engagement
3. Emotional Transparency
4. Conscious Co-Authorship

The future of decision-making is not human vs. machine. It is human-with-machine, a symbiotic intelligence where emotional neuroscience and generative AI jointly govern the cognitive landscape.

We are no longer solo authors of our choices, but collaborators with our tools, and the sooner we understand this hybrid architecture, the better prepared we will be to shape (and safeguard) the future of the co-authored human mind.



# Cardiovascular Health: Thrombosis and Stroke Awareness

By Editorial Team

---

World Thrombosis Day on October 13 and World Stroke Day on October 29 call attention to cardiovascular conditions that account for a large share of deaths and disability. The World Thrombosis Day campaign notes that one in four people worldwide die from conditions related to thrombosis. Stroke, meanwhile, is a leading cause of death and disability in Canada; the Heart & Stroke Foundation reports more than 108 000 strokes annually—about one every five minutes—and almost one million survivors. Raising awareness about risk factors, prevention and rapid treatment is critical.

### **Understanding Thrombosis and Stroke**

Thrombosis refers to blood-clot formation inside blood vessels. These clots may obstruct blood flow (leading to ischemia) or break loose and travel (causing embolism). Venous thromboembolism, which includes deep-vein thrombosis and pulmonary embolism, is a major cause of hospital mortality. Arterial thrombosis causes heart attacks and ischemic strokes. Globally, heart attack and stroke are top cardiovascular killers, and thrombosis is the common mechanism. Risk factors include prolonged immobility, surgery, cancer, pregnancy, hormonal therapy, obesity, smoking and inherited clotting disorders.

A stroke occurs when blood flow to the brain is interrupted (ischemic) or when a vessel ruptures (hemorrhagic). Ischemic strokes account for about 87 % of cases. Stroke rates in Canada are rising due to population ageing and increased strokes among younger adults. Stroke can occur at any age: one baby has a stroke every day in Canada, and more than 10 000 children live with stroke. Pregnancy increases risk—about 30 per 100 000 women experience a stroke during pregnancy or postpartum. Traditional risk factors such as hypertension, hyperlipidaemia, diabetes and obesity remain dominant, but emerging risks include air pollution and chronic stress.

### **Impact and Burden in Canada**

Stroke is the fourth leading cause of death in Canada. With improved acute care, more people survive strokes, but 60 % of survivors have some disability. More than 40 % live with moderate to severe disability. Approximately nine in ten Canadians have at least one risk factor for heart disease or stroke, yet 80 % of premature strokes and heart disease cases could be prevented through healthy behaviours. Although comprehensive national data on thrombosis are limited, the global statistic that one in four deaths is linked to thrombosis underscores its significance.

## Prevention and Awareness

For thrombosis, awareness of risk factors and symptoms is vital. Preventive measures include maintaining mobility during long trips, using prophylactic anticoagulants during and after hospitalisation, and encouraging smoking cessation. For stroke, the FAST acronym (Face drooping, Arm weakness, Speech difficulty, Time to call 911) helps bystanders recognise signs and act quickly. Rapid thrombolytic therapy or mechanical thrombectomy greatly improves outcomes. Community blood-pressure screening, smoking-cessation programmes and dietary interventions are cost-effective prevention strategies. Rural and Indigenous communities often face shortages of specialists and diagnostic equipment; tele-stroke programmes can connect remote hospitals with stroke specialists to facilitate timely interventions.

## Research and Future Directions

Research focuses on refining anticoagulant therapies, developing safer clot-dissolving drugs and employing artificial intelligence to predict stroke risk. Wearable devices that detect atrial fibrillation can identify patients who may benefit from preventive anticoagulation. Genetic studies aim to uncover why some individuals are more prone to thrombosis. However, an environmental scan of Canadian AI initiatives notes that most projects are concentrated in hospitals and remain at pilot stages, leaving community settings underrepresented.

Thrombosis and stroke are formidable threats, but awareness and preventive action can drastically reduce their toll. By supporting public campaigns, ensuring equitable access to preventive care and integrating technological innovations with clinician expertise, Canada can translate October's observances into meaningful cardiovascular-health gains.

## References:

- Heart & Stroke Foundation. (2025). *Stroke Month 2025 backgrounder*
- International Society on Thrombosis and Haemostasis. (2024). *World Thrombosis Day: Our story*
- Statistics Canada. (2025). *AI in action: Transforming clinical care across Canada*





# The Promise of the Canadian Dental Care Plan

By Editorial Team

---

National Dental Hygiene Month shines a light on oral health's importance to overall wellness. Poor dental hygiene is associated with cardiovascular disease, diabetes and adverse pregnancy outcomes, yet cost barriers prevent many Canadians from accessing care. The 2024 roll-out of the Canadian Dental Care Plan (CDCP) aims to offer insurance coverage to uninsured low- and middle-income families. This report assesses oral-health disparities and the potential impact of the CDCP.

## The State of Oral Health

Dental care in Canada is largely privately funded. Routine check-ups and preventive services are expensive, and dental benefits are unevenly distributed. Statistics Canada's study on cost-related avoidance of oral health services found that 28 % of Canadians did not visit an oral-health professional in the previous year. Among those who skipped visits, 49 % cited cost as the main reason, and 24 % avoided care even though they had visited a professional at another time.

Households with adjusted family net income under \$90 000 were almost three times as likely to avoid dental visits compared with those above that threshold. Canadians without dental insurance were especially vulnerable: 45 % avoided visits due to cost.

Young adults and marginalized groups face disproportionate barriers. Nearly one-third of 18–34-year-olds avoided dental care. Women (27 %) were more likely than men (22 %) to cite cost, and racialized Canadians and persons with disabilities reported higher avoidance rates. These figures illustrate how oral-health inequities intersect with income, gender and race.

### **The Canadian Dental Care Plan**

The CDCP provides coverage for children, seniors and adults without private insurance whose family income is below \$90 000. Covered services include preventive care, fillings, root canals and dentures. Preliminary data from the 2025 Survey of Oral Health Care Providers show that 96 % of practices were accepting new patients and that wait times for non-emergency appointments were typically under one month. However, 80 % of practices reported staffing challenges, suggesting capacity constraints as millions of new patients seek care. Oral Health and Systemic Health

Though the present study does not outline disease associations, research links periodontal disease to cardiovascular conditions, diabetes and adverse pregnancy outcomes. Untreated dental infections can lead to sepsis, and poor oral health affects nutrition and school attendance. Senior citizens with poor dentition are at risk of

malnutrition and pneumonia. Oral health is therefore a public-health issue rather than purely cosmetic.

### **Barriers Beyond Cost**

While the CDCP mitigates financial barriers, others persist. Rural and Indigenous communities frequently lack dental providers. Fear of dental procedures, language barriers and inaccessible clinics deter patients. People with disabilities may struggle to find suitable offices. Public-education campaigns that emphasize brushing, flossing, fluoridation and healthy diets must accompany the CDCP to maximize benefits.

Implementing the CDCP successfully will require cooperation across governments, dental associations and educational institutions. Workforce planning is crucial to ensure an adequate supply of dentists and hygienists, especially in underserved areas. Policy initiatives such as subsidized dental education for students who commit to rural practice may help. Continuous data collection will be vital for monitoring uptake and outcomes. Integrating dental care with public-health initiatives—such as school-based screening and community water fluoridation—can further reduce disparities.

Oral health is fundamental to overall well-being. The Canadian Dental Care Plan offers an opportunity to reduce long-standing disparities, but success depends on addressing workforce shortages and non-financial barriers. National Dental Hygiene Month underscores that routine brushing and flossing are not enough; equitable access to professional dental care is essential.

### **References:**

- Statistics Canada. (2024a). Cost-related avoidance of oral health services
- Statistics Canada. (2025). Survey of oral health care providers: Early findings.



# From Pilots to Patients: How to Build the 5% of Gen-AI Systems That Succeed in Transforming Healthcare

Reading the “95 % Failure” Statistic the Right Way in Healthcare

By Arman Kamran

---

In the spring of 2025, MIT’s “95 % AI failure” statistic swept through executive boardrooms faster than any epidemiological curve. Headlines announced that nearly all enterprise AI pilots had “failed.”

Across the healthcare sector, the reaction was instant: If ninety-five percent fail, are we next?

But that number was never meant to trigger despair. It was a mirror held up to our stage of adoption. What MIT actually measured wasn’t whether organizations were using AI—nearly every hospital, clinic, and research group now touches AI somewhere.

The study defined “success” far more stringently: a pilot counted as successful only if, within six months, it had gone into full production deployment with measurable business or clinical impact.

By that measure, yes—only about 5 % had crossed the finish line.

So what the number truly reveals is not failure, but immaturity. Healthcare systems are still learning how to move from inspired experimentation to embedded, measured, and regulated deployment. We are not witnessing AI collapse; we are watching the messy middle of adoption.

And yet, few industries sit closer to the heart of human consequence than healthcare. Here, “messy middle” translates into real stakes: clinician burnout, delayed diagnoses, mis-triaged patients, administrative overload, rising costs, and moral injury among professionals trying to serve too many with too little time.

If any sector must cross the 95 % chasm first, it is healthcare.

### Part 1—The State of Gen-AI in Integrated Healthcare: From Curiosity to Clinical Infrastructure

Walk through a modern academic hospital or a regional care network today, and you’ll encounter AI at every corner—and nowhere in particular.

A radiology team may use a vision model to highlight lung nodules. Psychiatrists might employ large-language models (LLMs) to summarize therapy notes. Nursing units use automated discharge summaries, while administrators pilot chatbots to schedule imaging appointments.

Individually, these are sparks. Collectively, they don’t yet form a grid.

The patchwork reality High awareness, high experimentation, low operational depth

Almost every large provider has at least a few Gen-AI pilots—often in documentation, transcription, or patient education. Yet only a small fraction have turned these into enterprise-grade workflows tied to outcomes such as length-of-stay reduction, readmission rate, or clinician FTE savings. Structural complexity

Unlike a bank or retailer, a healthcare system is a federation of professions, departments, and regulatory domains. A single care episode crosses dozens of data systems —EHR, PACS, LIS, RIS, pharmacy, billing, case management—each with its own custodianship

rules. Integrating Gen-AI into that ecosystem requires more diplomacy than code.

#### Data paradox

Healthcare holds some of the richest data on Earth, yet much of it is locked, fragmented, and noisy. Privacy mandates, inconsistent coding, and unstructured free text make training and retrieval difficult. Gen-AI’s strength—understanding unstructured language—seems tailor-made for healthcare, but only if data governance catches up.

#### Workforce overload

The World Health Organization forecasts a global shortfall of 10 million health workers by 2030. Burnout is endemic: clinicians spend up to 60 % of their day on documentation and administrative tasks. The economic case for Gen-AI is therefore not theoretical—it is existential.

#### Early islands of success

Hospitals such as Chi Mei Medical Center (Taiwan) have already operationalized Gen-AI copilots (“A+ Doctor,” “A+ Nurse,” “A+ Pharmacist,” and “A+ Nutritionist”) that integrate patient data across systems, automatically summarize charts, and assist staff.

Early metrics show that nursing documentation time dropped from 10–20 minutes to under 5, while self-reported burnout scores improved.

It’s a glimpse of what happens when AI moves from “interesting” to integrated. Why Most Healthcare AI Pilots Stall Between Demo and Deployment

If the 95 % failure statistic feels uncomfortably familiar in healthcare, that’s because the same structural barriers repeat. 1. Fragmented ownership

Who owns an AI pilot? The Chief Information Officer who provisioned the sandbox?

Medical Officer whose clinicians use it? The Compliance Office that must sign off? The truth is: everyone and no one.

Without clear end-to-end accountability, pilots drift—technically promising, politically orphaned.

## 2. Data governance bottlenecks

Health data lives in silos designed to prevent sharing. That’s good for privacy but terrible for learning.

Retrieval-augmented generation (RAG) can bridge some gaps, yet data-access friction and unclear custodianship often delay pilots for months.

## 3. Unclear success metrics

A pilot that saves ten minutes of physician time is valuable—unless it also adds fifteen minutes of compliance overhead. Most healthcare AI projects lack a pre-defined success metric tied to the “Triple Aim”: improved experience, better outcomes, lower cost. Without it, enthusiasm outpaces evidence.

## 4. The EHR gravity well

Electronic Health Record systems dominate clinician attention. If a Gen-AI tool lives outside the EHR, adoption drops. But integrating inside vendor ecosystems (Epic, Cerner, Meditech) requires complex APIs and vendor approval. Many promising pilots perish at this integration frontier.

## 5. Regulatory and ethical inertia

Clinical risk, data sensitivity, and liability create a cautious culture. Unlike consumer tech, healthcare cannot “move fast and break things.” Yet moving slowly and breaking people is worse. Balancing prudence and progress demands a new governance model—one that can accelerate responsible adoption.

## 6. The human factor

Clinicians are scientists and artists of trust. When AI feels like surveillance or replacement, resistance flares. When it feels like cognitive collaboration, acceptance grows. Pilots often fail not because they underperform, but because they fail to align with professional identity.

### The Five-Stage Roadmap to Gen-AI Maturity in Integrated Care

The journey from experimentation to system-wide impact unfolds in five stages—a staircase that every successful healthcare organization climbs, consciously or not. Each stage has distinct economics, risks, and leadership imperatives.

Stage	Name	Value Focus	Key Risks
0	Foundations / Readiness	Data governance, process mapping, ethical & regulatory baselines	Jumping ahead without infrastructure or policy
1	Pilot / Productivity	Staff efficiency, documentation reduction, summarization	Scope creep, weak evidence, user resistance
2	Workflow Integration	Embedded clinical decision support, cross-disciplinary coordination	Technical debt, workflow mismatch, compliance
3	Scale / Structural Transformation	System-wide care-pathway redesign, cost reduction, precision & predictive care	Change fatigue, data inequity, risk concentration
4	Maturity / Learning Health System	Continuous improvement, adaptive AI, new service models	Regulatory shocks, complacency, ethical drift

Over the next sections, we’ll explore each stage—what it looks like inside an integrated health network, how to recognize you’re there, and what must happen to advance.

### Stage 0—Foundations / Readiness in Healthcare Systems

Before a hospital can automate anything, it must know what it’s automating.

Stage 0 is not about coding models; it’s about building the substrate that allows them to operate safely, ethically, and effectively.



## 1. Data readiness

- Consolidate patient data across EHR, imaging, labs, and devices under consistent identifiers.
- Enforce lineage tracking and consent metadata—the invisible backbone of ethical AI.
- Create de-identified sandboxes for model training and prompt evaluation.
- Establish Data Governance Boards that include clinicians, data scientists, and ethicists.

## 2. Process readiness

- Map the “care value streams”: admission → diagnosis → treatment → discharge → follow-up.
- Identify the friction points—repetitive documentation, scheduling, hand-offs, triage decisions—that lend themselves to Gen-AI augmentation.
- Prioritize by frequency × impact × risk.

## 3. Regulatory readiness

- Update institutional review board (IRB) frameworks to accommodate LLM-based tools.
- Draft AI incident-reporting protocols parallel to medication-error systems.
- Engage legal and insurer partners early to clarify liability pathways

## 4. Cultural readiness

- Communicate a unifying narrative: AI will not replace clinicians, but clinicians who use AI will outperform those who don't.
- Establish training for prompt literacy, data interpretation, and ethical awareness.
- Create “AI Champions” within departments—peers who translate technology into practice.

Stage 0 isn't glamorous, but it determines everything that follows. In healthcare,

shortcuts here aren't just technical debt; they're moral debt.

## Stage 1—Pilots and Productivity Gains Across Clinical and Administrative Domains

Once foundations exist, the goal is demonstrable wins that reduce cognitive and administrative load.

### Common Stage-1 use cases

- Clinical documentation copilots: Generate encounter summaries, SOAP notes, or discharge letters from speech transcripts (e.g., Nuance DAX Copilot integrated with Epic).
- Radiology report drafting: Use Gen-AI to convert structured findings into coherent narrative reports for radiologist verification.
- Nursing hand-off summaries: Automatically compile key vitals and orders during shift changes.
- Pharmacy reconciliation assistants: Cross-check medication lists for interactions and duplications.
- Psychotherapy session notes: Summarize transcribed sessions for therapists while maintaining anonymization.

### The economics of Stage 1

At this stage, value appears as time-savings per encounter and reduced burnout.

For example, Stanford Health's 2023 pilot of AI scribes in primary care showed two hours of documentation saved per physician per day, and a 76 % reduction in self-reported burnout after three months. Multiply that by hundreds of clinicians, and the productivity dividend is real.

### Success factors

- Pick repetitive, text-heavy, low-risk tasks.
- Measure baseline and post-pilot performance (time, satisfaction, error).

- Involve clinicians in prompt design and evaluation.
- Ensure human-in-the-loop verification for every output.
- Publicize wins internally to build momentum.

#### Risks

- Over-promising (AI “doctors”).
- Insufficient privacy controls (transcription data).
- Pilots that never leave the sandbox.

Stage 1 is about confidence, not conquest. The organization must believe that Gen-AI can lighten the load without endangering trust.

#### Part 2—Crossing the Chasm: From Workflow Integration to the Learning Health System

##### Stage 2—Workflow Integration Across Care Pathways and Clinical Functions

If Stage 1 proved that Gen-AI could help clinicians, Stage 2 proves that it can stay.

This is the critical inflection point where the novelty of pilots gives way to the discipline of integration—embedding generative intelligence directly into the arteries of care delivery.

In a hospital network, integration means that the AI is no longer a sidekick in a pilot app; it’s a reliable step inside the care pathway: within the EHR, inside the radiology PACS, woven through the nursing shift board, or automatically reconciling patient summaries for cross-disciplinary rounds.

#### The new reality of clinical work

Consider a typical patient journey: an elderly diabetic admitted with chest pain. Before Gen-AI integration, that patient’s data is scattered across cardiology, endocrinology, nursing, pharmacy, imaging, and lab reports each department maintaining partial truths.

After integration, Gen-AI becomes the semantic bridge among these silos:

- A multimodal retrieval-augmented model surfaces relevant prior admissions, EKG patterns, medication conflicts, and guideline excerpts.
- A narrative engine synthesizes the findings into a one-page contextual brief for the attending physician.
- Notes from overnight nurses are condensed into prioritized “what changed” lists.
- The discharge summary and follow-up plan are auto-generated for human approval, complete with patient-friendly explanations.

That’s not “AI taking over healthcare”; it’s AI making care coherent.

#### Operational requirements

##### Technical infrastructure

- Unified identity and consent management across systems (EHR, RIS, LIS).
- Secure APIs enabling bidirectional data flow.
- Real-time observability for model outputs and latency.

##### Governance at scale

- Clinical AI oversight boards approving every use case. Tiered human-in-the-loop policies (e.g., auto-accept for low-risk phrasing corrections, mandatory review for treatment suggestions).
- Transparent audit trails and version control for models and prompts.
- Change management
- Redefine roles: documentation → verification, triage → supervision.
- Communicate the “why”: clinicians are not losing authorship; they’re gaining cognitive bandwidth.
- Continuous training on model interpretation, bias detection, and escalation.

- Real-world example: NHS England’s Gen-AI pilots
- In 2024, NHS England announced the AI Diagnostic Fund, supporting over 80 trusts to adopt AI across imaging, stroke, and pathology workflows. The aim was not isolated pilots but system-wide deployment pipelines—models certified by the MHRA, centrally procured, and locally embedded.
- Hospitals such as University College London Hospitals (UCLH) used AI to triage chest X-rays, cutting average report turnaround from days to hours.<sup>3</sup>
- While these models weren’t “generative” in the LLM sense, the integration frameworks they built—data interoperability, procurement governance, clinical validation—now serve as the scaffolding for generative deployments (e.g., summarizing multidisciplinary team meetings, drafting clinic letters).
- NHS England’s insight was simple: you can’t scale AI one trust at a time. Integration demands national plumbing. Economic inflection
- At Stage 2, Gen-AI starts shifting from cost center to efficiency engine.
- Savings appear through:
  - Reduced time per encounter (documentation, discharge, intake).
  - Faster coding and billing cycles.
  - Fewer communication errors and duplicated diagnostics.
  - Shorter length of stay from improved hand-off accuracy.

But the deeper gain is cognitive throughput—clinicians reclaiming attention for high-value decisions.

As Mayo Clinic’s CIO remarked when launching its “AI Factory” in 2024:

“Our goal is not automation for its own sake; it’s to move from reactive documentation to proactive insight.”

How to know you’ve reached Stage 2

1. AI outputs appear directly inside existing clinical systems, not on separate dashboards.
2. Governance frameworks exist for approval, monitoring, and rollback.
3. KPIs shift from minutes saved to outcome metrics (readmission rates, error reduction).
4. Users trust the system enough to depend on it daily—and complain when it’s offline.

When those conditions hold, you’re ready for Stage 3: Scale.

Stage 3—Scaling Gen-AI for Structural Transformation and Value-Based Care

Scaling is not just more of the same.

It is different in kind—turning patterns into platforms, and local wins into systemic change. In integrated healthcare, scaling means connecting the clinic, the hospital, and the home through unified, adaptive intelligence. It is where Gen-AI begins to reshape cost curves, care models, and competitive positioning. From use cases to capability

By Stage 3, leading systems evolve from “projects” to capability portfolios:

- Documentation copilots across all specialties, tuned to local terminology.
- Predictive-narrative pipelines combining LLMs with traditional ML for risk stratification.
- Patient-facing chat assistants harmonized with official care pathways and consent policies.
- Research copilots accelerating literature reviews, protocol drafting, and cohort selection.

To support this, CIOs invest in AI-Ops for Healthcare—internal teams monitoring model drift, updating prompt templates, enforcing cost controls, and coordinating retraining schedules.

Organizational redesign

At scale, the human organization must evolve.

Hospitals introduce new roles:

- Clinical AI Stewards—physicians responsible for supervising specialty-specific models.
- Prompt Librarians—curating validated prompt patterns and contextual data sources.
- AI Safety Officers—bridging risk management, legal, and ethics.
- AI Product Owners—ensuring each model aligns with clinical and operational KPIs.

Cross-functional “AI Rounds” emerge—weekly multidisciplinary sessions reviewing output anomalies, new use-case proposals, and patient feedback.

This is the social fabric of Gen-AI governance: transparent, iterative, inclusive. Example: Cleveland Clinic and the AI-enabled Digital Twin

In 2024, Cleveland Clinic unveiled its Digital Twin initiative—a dynamic computational replica of its entire hospital system, integrating operational data, patient flows, and facility metrics.<sup>5</sup>

Though not purely generative, the twin uses LLM components to translate simulation outputs into executive dashboards and “what-if” narratives (“What happens if surgical volume rises 15 % in winter?”).

This exemplifies Stage 3: using AI to re-architect how management thinks, not just how clinicians document.

Economic and policy implications

Scaling Gen-AI unlocks value-based care economics:

- Predictive triage reduces preventable admissions.
- Personalized education lowers readmission risk.
- Streamlined documentation improves billing accuracy and compliance.
- Adaptive scheduling optimizes capacity and reduces overtime costs.

Regulators are beginning to respond.

In the U.S., the FDA’s 2024 “Action Plan for AI/ML-Based SaMD” introduced the concept of Predetermined Change Control Plans—allowing continuous model updates under oversight.

In Europe, the AI Act now defines “high-risk AI in healthcare,” clarifying documentation and transparency obligations. Scaling safely is no longer optional; it is legislated.

### **Cultural transformation**

At this point, success is less about models and more about mindset.

When clinicians start saying, “Let’s check what the model thinks,” as naturally as “Let’s order a scan,” you have crossed into structural transformation. It’s not subservience to machines; it’s partnership with cognition at scale.

### **Stage 4—Full Maturity: Building the Learning Health System**

Stage 4 is where Gen-AI becomes the nervous system of healthcare—continuously sensing, learning, and adapting.

- It's no longer a project portfolio; it's a way of operating.

Characteristics of a mature Gen-AI healthcare ecosystem

Continuous learning loops

- Every clinical note, patient interaction, and operational outcome feeds back into model refinement (with privacy-preserving aggregation).
- Quality-improvement cycles shorten from years to weeks.

Multimodal fluency

- Text, imaging, genomics, wearables, and social determinants converge in unified reasoning.
- For example, a model correlates MRI scans, lab trends, and lifestyle data to suggest individualized recovery plans.

Cognitive collaboration

- AI systems draft, clinicians decide, patients participate.
- Psychotherapy notes summarize emotional themes over time; neurosurgical planning copilots compare prior cases and literature.
- The machine becomes a quiet, persistent colleague—never tired, never distracted, always explainable.

Ecosystem integration

- Hospital, clinic, pharmacy, insurer, and home-care partners exchange AI-interpretable data via FHIR APIs and federated learning.
- The health system behaves like one organism—sensing, reasoning, healing. Example: Mayo Clinic's AI Factory and the road to continuous learning

Mayo Clinic's AI Factory initiative, launched in 2024, represents the early contours of Stage 4.

It standardizes data pipelines, governance, and validation across the enterprise, enabling new models to move from concept to clinic in months rather than years.

Its collaboration with Google Cloud allows federated learning across Mayo sites without centralizing sensitive data—a blueprint for global collaboration under strict compliance.

This “factory” is not about industrializing care; it's about industrializing trustworthy intelligence.

Macro-level impact

When a healthcare system reaches Stage 4, three transformations occur:

- Economic: Administrative waste declines; care shifts from episodic to predictive; ROI compounds through avoided errors and optimized resource use.
- Clinical: Outcomes improve through precision, personalization, and early intervention.
- Cultural: Medicine evolves from memory-driven to data-amplified—a renaissance of clinical judgment, not its replacement.

At this maturity, Gen-AI becomes invisible—embedded in every workflow, policy, and interaction, like electricity in the wall. Macro-Implications: Economics, Policy, and the Re-Architecture of Care

1. Economics

Health systems spend roughly 25 % of total cost on administration.

If Gen-AI can reclaim even a third of that through automation and error reduction, the fiscal impact rivals major reimbursement reforms.

McKinsey Health Institute (2024) estimated potential savings of \$200—\$360 billion annually in the U.S. from automation of documentation, billing, and scheduling.

Those savings aren't about cutting headcount; they're about redirecting human time to where empathy, nuance, and creativity matter.

## 2. Policy and regulation

Regulators worldwide are pivoting from prohibition to precision oversight.

Policies now emphasize transparency, explainability, and post-market surveillance.

For executives, this means baking compliance into architecture: audit logs, change-tracking, ethical review, and AI incident management.

## 3. Data and interoperability

The holy grail remains a longitudinal patient record accessible across care settings.

Gen-AI thrives on context—but without interoperability, context is lost.

Hence, investments in FHIR APIs, health-information exchanges, and privacy-preserving federated learning are prerequisites for realizing Gen-AI's full clinical reasoning power.

## 4. Workforce evolution

Future hospitals will pair every clinician with a personalized cognitive copilot.

Residency programs are already introducing prompt-literacy modules; medical boards discuss integrating AI competency into licensure.

The clinician of 2030 will be as fluent in asking models as in ordering labs.

## From EHR Burnout to Cognitive Collaboration

The greatest irony of modern medicine is that technology meant to save lives ended up suffocating those who use it.



EHR interfaces, billing codes, compliance screens—each designed for safety—collectively eroded joy in practice.

Generative AI offers a path out, but not by magic.

It succeeds only when organizations climb the staircase deliberately:

1. Lay the foundations—data, ethics, governance.
2. Win small, win visibly—relieve clinicians of repetitive load.
3. Integrate deeply—make AI part of the workflow, not a tab beside it.
4. Scale wisely—turn patterns into platforms.
5. Evolve continuously—measure, learn, adapt.

Healthcare is humanity's most complex choreography.

Generative AI will not replace the dancers; it will tune the music, adjust the lighting, and ensure that every step—from psychotherapy to brain surgery—moves in rhythm with insight.

The “95 % failure” statistic is not a prophecy; it's a timestamp.

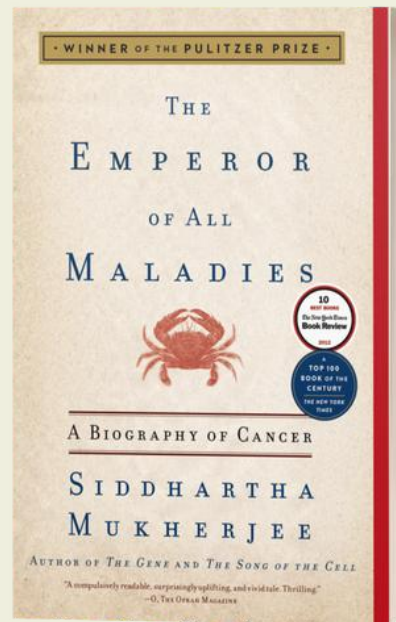
It tells us where we are on the adoption curve, not where we'll end up.

Those who build the learning systems today will lead the healing systems of tomorrow.

## References

1. MIT NANDA—The GenAI Divide: State of AI in Business 2025.
2. Aditya Challapally, Chris Pease, Ramesh Raskar, Pradyumna Chari. July 2025. Preliminary findings from MIT's Project NANDA detailing that ~95% of enterprise Gen-AI efforts fail to reach production with measurable impact.
3. Microsoft News Center Asia, “Taiwan hospital deploys AI copilots to lighten workloads for doctors, nurses and pharmacists,” June 2024.
4. Stanford Medicine News Center, “AI scribes reduce doctors' documentation burden and burnout in early studies,” Sept 2023.
5. NHS England, AI Diagnostic Fund: Interim Report, 2024.
6. Mayo Clinic Press Release, “Mayo Clinic launches AI Factory to accelerate responsible innovation,” Nov 2024.
7. Cleveland Clinic Innovation Center, “Digital Twin Operations and Predictive Modeling,” May 2024.
8. McKinsey Health Institute, “The productivity potential of healthcare automation,” Jan 2024.

# BOOK Review



Book of The Month

## The Emperor of All Maladies

By: Siddhartha Mukherjee

Cancer's Biography: A Pulitzer-Winning Saga of Humanity's Greatest Foe

By Suman Dhar

---

Some books teach you.  
A few unsettle you.  
But once in a rare while, a book reorients your understanding of life itself.

Siddharth Mukherjee's *The Emperor of All Maladies* did that for me. I picked it up expecting a medical history. What I found was a sweeping human drama - a story where the villain is not a monster from the outside, but a mutation from within.

This is not a book about cancer. This is a book about the human race caught in a 4,000-year war with its own biology.

### **The Lens: A Biography of a Shape-Shifting Enemy**

Rather than conceiving of cancer as the problem in medicine, Mukherjee frames it as an ever-changing character, adapting, resisting, and outwitting us.

Through this lens, the book becomes:

- From textbook → into a narrative of conflict
- From scattered research → into a centuries-long chase
- From statistics → into stories of grit, hope, and devastating loss

The genius lies in giving cancer an arc -- one that forces the reader to confront the uncomfortable truth: as long as we live longer, cancer will always be with us.

Three Micro-Stories That Anchor the Experience

Mukherjee never overwhelms with data; he anchors insight in human stories. A few stayed with me:

- The young patient Carla, whose quiet courage becomes a recurring emotional spine of the book. Through her, Mukherjee shows that cancer treatment is not only a medical journey but a negotiation with fear, identity, and time.
- The desperate race to find a cure during the 1950s, when doctors experimented with combinations of chemotherapy like codebreakers hunting for the right sequence. These pages read like a scientific thriller-you feel the tension, the risk, the ethical tightrope.
- The early surgeons who thought cancer could be “cut out completely”, which led to increasingly radical procedures. The brutality is hard to read, but it reveals a tragic pattern: humanity often responds to the unknown with excess.

But none of these stories spoil the book; they light up the soul.

How the Book Changes You

Before reading, I thought about cancer as a modern epidemic - the nightmare of our times.

After reading, I realized:

- Cancer is as old as civilization.
- It thrives because it mirrors the logic of life: grow, divide, survive.
- Our struggle is not linear, but rather cyclical, adaptive, and deeply personal.

The central message of Mukherjee's brilliant book lands with quiet force: to understand cancer is to understand ourselves - our biology, our limits, and our relentless will to endure.

What Mukherjee does really well is

- Makes science ‘more effective.’ You learn big concepts-like oncogenes, angiogenesis, and cell-signalling pathways-but never feel as though you are being lectured to.
- Melds history with suspense. Every find seems like a page in an age-old detective novel.
- Balances hope with realism. He never promises miracles yet never abandons the belief that improvement is possible.

Where the Book Falts (Just Slightly)

The ambition the thousands of years, the dozens of therapies, and multiple scientific revolutions can be overwhelming at times.

You may need pauses to absorb the weight of what you're reading.

But this density is also its power.

Mukherjee respects the reader enough to tell the full truth.

Verdict: Read This If...

- You're looking for a non-fiction book that actually reads like a medical thriller.
- You like stories that incorporate science, humanity, and history.
- You seek to know more about how life is fragile yet resilient.

This is not merely a book about disease.

It is a book about human perseverance, written with the precision of a scientist and the empathy of a storyteller.



Magazica is a dynamic platform connecting businesses, experts, and health advocates to share cutting-edge insights and advancements in the health industry. Focused on enhancing wellness, we provide a space for showcasing innovations that shape the future of healthcare.

With a strong presence in North America, particularly Canada, Magazica hosts global experts to share valuable knowledge with the Canadian community.

Our structured approach supports health-focused businesses in their mission to improve lives.



magazica.com