

The Biopsychosocial Model of Addiction

This section teaches the biopsychosocial model in depth — the idea that addiction grows out of biology, psychology, and social life working together. It takes the model apart thread by thread, looks at what current research says about each one, and puts it back together into a single picture of a whole person. A linked, annotated bibliography appears at the end so you can read further on anything that interests you.

This section will teach the student to:

- Explain why no single cause can explain addiction
- Describe how biology, psychology, and social life each contribute — and interact
- Explain where the “brain-disease” debate fits, and what it gets right and wrong
- Describe how the model translates into real, whole-person treatment

Why One Cause Is Never Enough

Imagine two people who drink the same way, for the same number of years. One walks away without much trouble. The other ends up in deep crisis. Same substance, same amount of time — very different outcomes. Why?

That question is the heart of the biopsychosocial model. For a long time the field tried to explain addiction with a single cause — a moral failing, a disease, a bad environment. Each answer explained some people some of the time, but none explained everyone. The biopsychosocial model takes a different approach: addiction is almost never about one thing. It grows where biology, psychology, and a person’s surroundings overlap, and to understand any one person you have to look at all three.

This is not just academic tidiness. Single-cause thinking is where treatment tends to go wrong — the program that detoxes the body but ignores the person’s relationships, or the one that explores feelings but never addresses a genuine physical dependence. Each does part of the job and then watches the person relapse into the part it skipped.

The model traces back to a 1977 argument that medicine had been too quick to reduce illness to biology alone, and needed a framework that held the biological, the

psychological, and the social together (Engel, 1977). Applied to addiction, the core claim is that “biological, genetic, personality, psychological, cognitive, social, cultural, and environmental factors interact to produce the substance use disorder, and multiple factors must be addressed in prevention and treatment programs” (Skewes & Gonzalez, 2013). This section walks through those three threads one at a time, then ties them back together.

THE THREE THREADS AT A GLANCE

Thread	What it includes	What it shapes
Biological	Genes, brain reward and stress circuits, temperament	A person’s vulnerability, and how a substance feels to them
Psychological	Beliefs, expectations, coping, mental health	Why a person uses, and whether they believe they can stop
Social	Family, peers, partners, culture, environment	Exposure and pressure — and the resources available for recovery

The Debate Behind the Model

Before the threads, it helps to know there is a live argument about how much weight to give biology. You will hear addiction called a “brain disease,” and there is real science behind it: the medical view holds that **substance use disorders (SUDs) are physiological, chronic, and treatable medical conditions**, rooted in measurable changes to the brain’s reward and stress systems (Koob & Volkow, 2016).

But the label is debated. One careful effort to settle the question concluded that addiction is rooted in real brain changes, yet a person’s capacity to choose is impaired, not erased — addiction is “probabilistic, not deterministic” (Heilig et al., 2021). Others argue the brain changes are better understood as ordinary learning pushed to an extreme rather than as disease (Lewis, 2017), and some public-health voices warn that leaning too hard on the brain-disease label can crowd out the social causes that matter just as much (Lie et al., 2022).

You do not need to pick a winner. The whole point of the biopsychosocial model is that you do not have to — it is the field’s way of holding these truths at once.

Why does this debate matter for a counselor, rather than just for researchers? Because the model in your head leaks into the room. Lean too far toward “brain disease” and you can unintentionally tell a client they are broken and powerless; lean too far toward “just choices” and you can slide back into blame. The biopsychosocial stance lets you say something truer and more useful at once: your brain really has changed, and you still have real agency, and we have several ways in.

Key term — Substance use disorder (SUD): the clinical name for the condition commonly called addiction — a pattern of use that continues despite harm. The medical view treats it as a chronic, treatable condition, much like diabetes or high blood pressure.

The Biological Thread

GENES LOAD THE DICE

Some of the difference between our two drinkers is written in their genes. Twin and adoption studies consistently find that roughly **half** of a person’s risk for an alcohol problem is inherited (Verhulst et al., 2015), with the exact figure varying by substance (Goldman et al., 2005). The newest research has begun to pin down the actual genes: a study scanning the DNA of more than a million people found genetic markers shared across substance use disorders, many of them tied to the brain’s dopamine system — the chemistry of reward and motivation (Hatoum et al., 2023).

It is just as important to say what this does not mean: genes are not destiny. Inheriting risk is like being dealt a difficult hand, not a sealed fate. A person still has to pick up the substance, and a supportive environment can keep that vulnerability from ever turning into a problem. Heritability describes differences across a population, not a verdict on any one person.

Key term — Heritability: an estimate of how much of the variation in a trait across a population is explained by genetic differences. Saying alcohol use disorder is “about 50% heritable” does not mean half of any one person’s addiction is genetic — it means genes account for about half the differences between people.

THE BRAIN’S REWARD AND STRESS SYSTEMS

The other half of the biological story is what happens after a person starts using. Repeated use gradually reshapes the brain’s motivational circuits, and the result is a kind of double trouble: the reward system becomes less responsive — so ordinary pleasures, and even the drug itself, feel flatter — while the brain’s stress systems become more easily triggered (Koob & Volkow, 2016). The person ends up chasing a high that keeps shrinking while feeling worse and worse without the substance. That combination — diminished reward plus rising stress — is a large part of why addiction is so hard to simply walk away from, and why “just stop” is rarely useful advice.

These changes are not permanent the way a missing limb is permanent — the brain keeps much of its capacity to recover over time — but they are real, they are slow to reverse, and they are why early abstinence can feel so bleak. A person a few weeks into recovery is often fighting a brain temporarily short on its own sources of reward. Knowing this lets a counselor normalize that flatness and frame it as a stage to get through, rather than proof that recovery isn’t working.

For the counselor — Understanding the biology changes the tone of the work. A client who keeps using despite real consequences is not necessarily weak or in denial; their reward and stress systems have been pulled out of balance. That framing replaces frustration with patience — and points toward concrete tools, including medication.

The Psychological Thread: Personality and Temperament

Biology is not only genes; it also shows up as temperament — the personality a person brings into the world. Decades of research point to a recognizable risk profile, but the details matter, so it is worth taking them in turn.

A RECOGNIZABLE RISK PROFILE

A large meta-analysis linking broad personality traits to mental health found that substance use disorders are distinctively tied to **disinhibition** — difficulty restraining impulses — more than to the anxiety or low mood that mark other conditions (Kotov et al., 2010). People who are highly impulsive, who chase novelty and strong sensations, and who struggle to manage difficult emotions are simply more likely to develop substance problems.

IMPULSIVITY COMES IN FLAVORS

“Impulsivity” turns out not to be one thing. When researchers break it apart, the piece most tightly linked to addiction is **negative urgency** — the tendency to act rashly when feeling bad (Coskunpinar et al., 2013). This is a clinically useful distinction: a client whose use is driven by negative urgency needs help tolerating distress, which is a different task than helping a sensation-seeker find healthier excitement. Picture two clients: one drinks the moment a hard feeling hits and they need it gone now; the other uses because sober life feels boring and flat. Both look “impulsive” on the surface, but the work is different — distress tolerance for the first, meaningful stimulation and structure for the second.

IT OFTEN STARTS EARLY — AND PREDICTS THE ROAD AHEAD

The pattern reaches back into childhood. Poor self-control that is visible early in life is one of the most reliable developmental predictors of later substance problems (Zucker et al., 2011). And these traits do not just raise risk; they shape treatment. A meta-analysis found that higher impulsivity at the start of treatment predicted poorer outcomes — meaning impulsivity is not only a cause of addiction but something treatment itself may need to target directly (Hershberger et al., 2017).

For the counselor — Many clients were wired for difficulty managing impulses long before they ever met a drug. Naming that — without excusing the behavior — helps a person understand their own struggle and treat it as something workable rather than a character flaw.

How Habits Get Wired In: Conditioning

Addiction is also learned, in the plain sense that the brain learns from association, reward, and repetition. Two old principles from psychology — classical and operant conditioning — explain a surprising amount of how it takes hold and how treatment can push back.

CUES AND CRAVING (CLASSICAL CONDITIONING)

Over time, the people, places, and objects connected to using a substance become **triggers**. Through simple association, they take on the power to set off a strong, automatic urge all on their own. This is not a metaphor — it is measurable: across many studies, drug-related cues reliably produce craving compared with neutral cues (Carter & Tiffany, 1999). It is why someone can feel fine for weeks and then be blindsided by a craving simply from driving past an old hangout, smelling alcohol, or seeing a particular friend.

Key term — Cue reactivity: the automatic craving and physical response set off by encountering the people, places, and things associated with past use. Identifying a client's specific cues — and planning for them — is one of the most concrete tools in relapse prevention.

REWARD AND REINFORCEMENT (OPERANT CONDITIONING)

If classical conditioning explains the trigger, operant conditioning explains the payoff: behaviors that are rewarded get repeated. Substance use is heavily reinforced, both by the pleasure it can bring and by the relief from discomfort it provides. The hopeful flip side is that the same principle can be turned toward recovery. **Contingency management** — giving people concrete, escalating rewards for verified abstinence — has a strong track record; for stimulants like cocaine, where no medication is approved, it is among the most effective tools we have (Bentzley et al., 2021). Its one catch is that the gains tend to fade once the rewards stop, so it works best paired with skill-building rather than used alone (Davis et al., 2016).

THE TRAP OF NEGATIVE REINFORCEMENT

There is a darker turn in this learning story that every counselor should understand. Early on, people tend to use a substance to feel good — for pleasure, confidence, or

escape. But as use continues and the brain's reward and stress systems shift, the motivation quietly flips: people increasingly use not to feel good but to stop feeling bad — to quiet withdrawal, anxiety, or the low, flat mood that sets in without the drug (Koob & Volkow, 2016). This is **negative reinforcement**, and it is a trap, because the substance briefly relieves the very distress that heavy use created in the first place. It helps explain why someone deep in addiction can look as though they no longer enjoy anything yet still cannot stop: they are not chasing a high so much as fleeing a low.

For the counselor — When a client says “I don’t even like it anymore, I just can’t function without it,” they are describing negative reinforcement, not making an excuse. The implication is direct: relief-driven use calls for building other ways to manage distress and, where appropriate, medication to steady the underlying systems.

What the Mind Expects: Expectancies and Self-Efficacy

Beyond temperament and conditioning sits a third psychological layer: what a person believes. Two beliefs in particular do a lot of work.

WHAT YOU EXPECT A SUBSTANCE TO DO

People do not use substances in a vacuum of expectation — they use them for something. Those expectations shape behavior: people who expect alcohol to make them confident or relaxed tend to drink more and run into more trouble (Stamates et al., 2024). Part of a counselor's work is gently examining those expectations, because they are often exaggerated or out of date.

WHAT YOU BELIEVE YOU CAN DO

The mirror image of expectancy may be the single most important psychological factor in recovery: **self-efficacy**, a person's belief that they can actually handle life's stresses without using. Research repeatedly finds self-efficacy among the most robust predictors of staying well (Witkiewitz et al., 2022). Crucially, it is not fixed — it is built. Every time a person gets through a craving or a hard day without using, the belief that they can do it again grows a little stronger.

Key term — Self-efficacy: a person’s belief in their own ability to carry out a behavior or handle a situation. In recovery, it is the quiet conviction that “I can get through this craving without using” — and it grows with each time a person proves it to themselves.

MEETING PEOPLE WHERE THEY ARE

These beliefs connect to readiness to change. People do not flip from using to recovery overnight; they move through recognizable stages, and pushing someone to act before they are ready usually backfires. Matching the approach to the person’s actual stage — and building motivation rather than demanding it — is one of the most useful skills in the field (Substance Abuse and Mental Health Services Administration [SAMHSA], 2019).

For the counselor — Expectancies, self-efficacy, and readiness give you three practical questions for any client: What do you think using does for you? Where do you feel able to cope without it? And how ready do you actually feel to change right now? The answers point straight to the work.

The Social Thread

No one uses or recovers in a vacuum. The people around a person — and the world they live in — shape both how addiction starts and how recovery holds.

FAMILIES

We learn behavior partly by watching the people closest to us, beginning with family. Children of parents who use are more likely to use themselves — but the link is not automatic. One longitudinal study found that adolescents modeled their parents’ substance use mainly when the parent-child relationship was warm; a poor relationship actually weakened the modeling (Andrews et al., 1997). Family, in other words, transmits both risk and protection.

PEERS

As people move into adolescence and adulthood, peers become one of the strongest forces shaping use — the drug-use behavior of a person’s friends is among the best predictors of their own (Smith, 2021). Among young people specifically, friends’ use is the most consistent predictor of an adolescent’s own use across long-term studies (Torrejón-Guirado et al., 2023).

PARTNERS

The influence does not stop with friends. Among adults, a romantic partner’s drinking or drug use closely tracks with a person’s own, for better or worse (Fleming et al., 2010) — which means a partner can be a powerful ally in recovery or a serious obstacle to it.

ENVIRONMENT AND OPPORTUNITY

Zoom out from individual relationships and the wider environment comes into view. How easily a substance can be obtained, how normal its use looks in a neighborhood, and the weight of stressors like poverty, unstable housing, and unsafe surroundings all shape both who develops a problem and who manages to recover. None of this lets a person off the hook for their choices, but it does help explain why two people with similar biology and temperament can land in very different places — and why effective help often means changing a person’s circumstances, not just their mindset. The biopsychosocial model insists that the environment is not mere background; it is an active ingredient (Skewes & Gonzalez, 2013).

For the counselor — This thread turns “willpower” into something concrete and changeable: who surrounds your client. Helping someone build sober friendships, repair family ties, and navigate a partner’s use is not separate from treatment — it often is the treatment.

Culture and Identity

A person’s culture and identity shape both their risk and their path to help — a part of the social thread important enough to take on its own.

DISPARITIES IN WHO GETS HELP

Treatment is not equally available or equally completed across groups. Research has documented real racial disparities in who finishes substance-use treatment and who falls out of it (Wright, 2025). For a counselor, this is not abstract: it means part of the job is noticing where a client may face extra barriers and actively working to close that gap rather than assuming a level playing field.

IDENTITY AS A SOURCE OF STRENGTH

Culture is not only a risk story — it can be protective. For young people of color, a strong, positive sense of ethnic identity has been linked to lower substance use, partly by supporting healthy self-esteem (Fisher et al., 2017). Helping a client connect with a source of pride and belonging is a legitimate part of building recovery.

CARE THAT FITS THE PERSON

Treatment also works better when it fits. Care thoughtfully adapted to a person's culture and language tends to outperform one-size-fits-all approaches (Hai et al., 2021) — a reminder that meeting people where they are includes meeting their cultural context, not just their stage of change.

Putting the Threads Together

It is one thing to pull the model apart thread by thread; it is another to see them braided together in a single person — which is how they always actually appear. Consider a composite picture (not any real client): a young man whose father drank heavily (a biological vulnerability and a family model), who is quick to act when he feels bad (negative urgency), who learned early that a few drinks reliably quiet his anxiety (a powerful expectancy, reinforced again and again), and whose closest friends all drink (a social world that makes using easy and quitting lonely). No single thread made him addicted. Each one alone might have been manageable. It is the interaction — biology lowering his threshold, temperament pulling the trigger, learning carving the groove, and environment supplying both the substance and the social reward — that produced the problem.

This is why the model matters in practice and not just on paper. If you treat only one thread, the others pull the person back: detox addresses the body but leaves the anxiety,

the expectancies, and the drinking friends untouched; a support group changes the social world but does nothing for an unmanaged physical dependence. The biopsychosocial model's quiet, radical claim is that durable recovery usually means loosening several threads at once — and that the threads can also work for a person. A medication steadies the biology, new coping skills rewire the psychology, and a sober community rebuilds the social world, each one making the others easier to hold.

For the counselor — A useful habit is to sketch all three threads for every client: What is the biology (family history, physical dependence, health)? What is the psychology (temperament, expectancies, trauma, mood)? What is the social world (family, peers, partner, housing, work)? The thinnest thread is often where the next piece of work lives.

Many Roads Out: Recovery and Medication

Step back, and the most encouraging fact in this whole field comes into view: people recover, and they do it in many different ways.

RECOVERY IS COMMON — AND OFTEN UNASSISTED

A nationwide survey found that more than **22 million American adults** have resolved a serious problem with alcohol or drugs — and nearly half did so without any formal treatment at all (Kelly et al., 2017). That fact is worth sharing with clients who feel hopeless: recovery is not a rare exception, it is the common outcome, and there is more than one road to it.

RECOVERY IS A PROCESS, NOT A SINGLE EVENT

It also helps to set expectations honestly. Recovery rarely runs in a straight line. Like other long-term health conditions, substance use disorders tend to come and go, and a return to use does not erase the progress a person has made. Seen through the biopsychosocial lens, a relapse is information, not a verdict — a sign that one of the threads needs attention, whether that is an unmanaged craving (biological), a wave of distress (psychological), or a slide back into an old social circle (social). The counselor's job is not to prevent every stumble but to help a person get back up faster each time, and

to keep building the biological, psychological, and social supports that make the next stretch of recovery a little steadier than the last.

MEDICATION THAT SAVES LIVES

For many people, medication is part of that road — and it helps to be clear about what these medicines are, because new learners often blur two very different things: the medicines used briefly to get a person safely through withdrawal, and the medicines used over time to support recovery.

MEDICATIONS IN ADDICTION TREATMENT

Category	Examples	What they do
Detoxification (withdrawal management)	Benzodiazepines for alcohol withdrawal	Safely manage the acute, sometimes dangerous symptoms of withdrawal. This is a standard, approved, evidence-based use — not off-label.
Maintenance / anti-craving	Methadone, buprenorphine, naltrexone (opioids); naltrexone, acamprosate (alcohol)	Reduce craving and relapse over the longer term; for opioids, sharply lower the risk of overdose death
Off-label	A medicine prescribed for a use not formally approved by regulators	Used at a clinician's discretion when evidence supports it for a particular patient

A key point for new counselors: **benzodiazepines used to manage alcohol withdrawal are not an off-label or improvised choice — they are a standard of care for detoxification** and should not be confused with off-label prescribing. As for the maintenance medicines, the evidence is strong: in opioid use disorder, only buprenorphine and methadone — not detox or counseling alone — were associated with reduced overdose (Wakeman et al., 2020), and staying on these medicines cuts the risk of death roughly two- to threefold (Sordo et al., 2017). For alcohol, medicines such as naltrexone and acamprosate meaningfully improve the odds of staying sober (Jonas et al., 2014).

Key term — Medication-assisted treatment (MAT): the use of FDA-approved medications, alongside counseling and support, to treat substance use disorders. For opioids it is lifesaving, and it works best as one part of whole-person care — not a replacement for it.

That range of roads is the biopsychosocial model's final and most important point. Because addiction grows from biology, psychology, and social life together, recovery can begin from any of those directions — a medication, a new way of thinking, a changed environment, a renewed sense of self — and the strongest plans usually weave several together. The model is, in the end, an argument for treating the whole person.

Key Takeaways

- **No single cause explains addiction.** Biology, psychology, and social life interact to produce it — and to resolve it.
- **Genes load the dice but don't decide the outcome** — roughly half of alcohol-use-disorder risk is heritable, but environment and choice still matter.
- **The mind matters as much as the molecule** — temperament, conditioning, expectations, and especially self-efficacy shape both use and recovery.
- **People are social** — families, peers, partners, and culture are part of the problem and part of the plan.
- **Medication is part of whole-person care** — and benzodiazepines for alcohol withdrawal are a standard detox treatment, not off-label.
- **There are many roads to recovery**, more than 22 million Americans have already found one, and the strongest plans combine several at once.

Bibliography & Further Reading

Every source below is linked and briefly annotated so you — or a learner new to the field — can follow up on anything that sparks your interest and begin to see how to source information from credible places. Sources are grouped as the foundational/classic works, contemporary research, and the current debate over the brain-disease model.

Overview source for this section

Skewes, M. C., & Gonzalez, V. M. (2013). The biopsychosocial model of addiction. In P. M. Miller (Ed.), *Principles of Addiction* (Vol. 1, pp. 61–70). Academic Press.

<https://doi.org/10.1016/B978-0-12-398336-7.00006-1>

— The chapter-length overview of the biopsychosocial model that this section is built around.

Foundational & classic sources

Andrews, J. A., Hops, H., & Duncan, S. C. (1997). Adolescent modeling of parent substance use: The moderating effect of the relationship with the parent. *Journal of Family Psychology*, 11(3), 259–270. <https://doi.org/10.1037/0893-3200.11.3.259>
— A longitudinal study showing adolescents model a parent's substance use mainly when the parent-child relationship is warm.

Carter, B. L., & Tiffany, S. T. (1999). Meta-analysis of cue-reactivity in addiction research. *Addiction*, 94(3), 327–340. <https://doi.org/10.1046/j.1360-0443.1999.9433273.x>

— Established that drug-related cues reliably and measurably trigger craving — the core of the conditioning thread.

Engel, G. L. (1977). The need for a new medical model: A challenge for biomedicine. *Science*, 196(4286), 129–136. <https://doi.org/10.1126/science.847460>

— The paper that introduced the biopsychosocial model and argued medicine must look beyond biology alone.

Goldman, D., Oroszi, G., & Ducci, F. (2005). The genetics of addictions: Uncovering the genes. *Nature Reviews Genetics*, 6(7), 521–532. <https://doi.org/10.1038/nrg1635>

— A standard reference for the range of heritability estimates across different substances.

Contemporary research (2010–2026)

Bentzley, B. S., Han, S. S., Neuner, S., Humphreys, K., Kampman, K. M., & Halpern, C. H. (2021). Comparison of treatments for cocaine use disorder among adults: A systematic review and meta-analysis. *JAMA Network Open*, 4(5), e218049.

<https://doi.org/10.1001/jamanetworkopen.2021.8049>

— Finds contingency management the most effective treatment for cocaine use disorder, for which no medication is approved.

Coskunpinar, A., Dir, A. L., & Cyders, M. A. (2013). Multidimensionality in impulsivity and alcohol use: A meta-analysis using the UPPS model of impulsivity. *Alcoholism: Clinical and Experimental Research*, 37(9), 1441–1450.

<https://doi.org/10.1111/acer.12131>

— Shows that “negative urgency” — acting rashly under distress — is the facet of impulsivity most tied to alcohol problems.

Davis, D. R., Kurti, A. N., Skelly, J. M., Redner, R., White, T. J., & Higgins, S. T. (2016). A review of the literature on contingency management in the treatment of substance use disorders, 2009–2014. *Preventive Medicine*, 92, 36–46.

<https://doi.org/10.1016/j.ypmed.2016.08.008>

— Documents contingency management’s strong in-treatment effect and the way gains fade once incentives end.

Fisher, S., Zapolski, T. C. B., Sheehan, C., & Barnes-Najor, J. (2017). Pathway of protection: Ethnic identity, self-esteem, and substance use among multiracial youth. *Addictive Behaviors*, 72, 27–32. <https://doi.org/10.1016/j.addbeh.2017.03.003>

— Shows a strong ethnic identity is linked to lower substance use, working through higher self-esteem.

Fleming, C. B., White, H. R., & Catalano, R. F. (2010). Romantic relationships and substance use in early adulthood. *Journal of Health and Social Behavior*, 51(2), 153–167. <https://doi.org/10.1177/0022146510368930>

— Shows that a partner’s substance use closely tracks with a person’s own, for better or worse, into adulthood.

Hai, A. H., Lee, C. S., Abbas, B. T., Bo, A., Morgan, H., & Delva, J. (2021). Culturally adapted evidence-based treatments for adults with substance use problems: A systematic review and meta-analysis. *Drug and Alcohol Dependence*, 226, 108856. <https://doi.org/10.1016/j.drugalcdep.2021.108856>

— Finds that culturally adapted treatments outperform one-size-fits-all care, especially versus no treatment.

Hatoum, A. S., Colbert, S. M. C., Johnson, E. C., Huggett, S. B., Deak, J. D., Pathak, G., ... Agrawal, A. (2023). Multivariate genome-wide association meta-analysis of over 1 million subjects identifies loci underlying multiple substance use disorders. *Nature Mental Health*, 1, 210–223. <https://doi.org/10.1038/s44220-023-00034-y>

— A million-person genetic study pinpointing dopamine-related genes shared across substance use disorders.

Hershberger, A. R., Um, M., & Cyders, M. A. (2017). The relationship between the UPPS-P impulsive personality traits and substance use psychotherapy outcomes: A meta-analysis. *Drug and Alcohol Dependence*, 178, 408–416.

<https://doi.org/10.1016/j.drugalcdep.2017.05.032>

— Finds that higher impulsivity at the start of treatment predicts poorer substance-use outcomes.

Jonas, D. E., Amick, H. R., Feltner, C., Bobashev, G., Thomas, K., Wines, R., ... Garbutt, J. C. (2014). Pharmacotherapy for adults with alcohol use disorders in outpatient settings: A systematic review and meta-analysis. *JAMA*, 311(18), 1889–1900.

<https://doi.org/10.1001/jama.2014.3628>

— The standard evidence base for naltrexone and acamprosate as medications that support alcohol recovery.

Kelly, J. F., Bergman, B., Hoepfner, B. B., Vilsaint, C., & White, W. L. (2017). Prevalence and pathways of recovery from drug and alcohol problems in the United States population. *Drug and Alcohol Dependence*, 181, 162–169.

<https://doi.org/10.1016/j.drugalcdep.2017.09.028>

— First nationally representative survey of U.S. recovery: more than 22 million adults have resolved a substance problem.

Koob, G. F., & Volkow, N. D. (2016). Neurobiology of addiction: A neurocircuitry analysis. *The Lancet Psychiatry*, 3(8), 760–773. [https://doi.org/10.1016/S2215-0366\(16\)00104-8](https://doi.org/10.1016/S2215-0366(16)00104-8)

— Describes how repeated use reshapes the brain’s reward and stress circuits — the biological core of the medical view.

Kotov, R., Gámez, W., Schmidt, F., & Watson, D. (2010). Linking “big” personality traits to anxiety, depressive, and substance use disorders: A meta-analysis. *Psychological Bulletin*, 136(5), 768–821. <https://doi.org/10.1037/a0020327>

— The canonical meta-analysis tying disinhibition and related traits to substance use disorders.

Smith, M. A. (2021). Social learning and addiction. *Behavioural Brain Research*, 398, 112954. <https://doi.org/10.1016/j.bbr.2020.112954>

— Applies social-learning theory to addiction, with peers among the strongest predictors of use.

Sordo, L., Barrio, G., Bravo, M. J., Indave, B. I., Degenhardt, L., Wiessing, L., ... Pastor-Barriuso, R. (2017). Mortality risk during and after opioid substitution treatment: Systematic review and meta-analysis of cohort studies. *BMJ*, 357, j1550. <https://doi.org/10.1136/bmj.j1550>

— Demonstrates that staying on methadone or buprenorphine cuts the risk of death two- to threefold.

Stamates, A. L., Preonas, P. D., Linden-Carmichael, A. N., Junkin, E., Roberts, R., & Lau-Barraco, C. (2024). Daily positive alcohol expectancies and alcohol use outcomes among college students. *Addiction Research & Theory*, 32(3), 219–224.

<https://doi.org/10.1080/16066359.2023.2241358>

— Shows that what people expect alcohol to do for them predicts how much they drink and how much trouble follows.

Substance Abuse and Mental Health Services Administration. (2019). Enhancing motivation for change in substance use disorder treatment (Treatment Improvement Protocol [TIP] Series, No. 35). U.S. Department of Health and Human Services. <https://www.ncbi.nlm.nih.gov/books/NBK571061/>

— The federal guideline operationalizing readiness-to-change and stage-matched motivational work.

Torrejón-Guirado, M.-C., Baena-Jiménez, M. Á., Lima-Serrano, M., de Vries, H., & Mercken, L. (2023). The influence of peer's social networks on adolescent's cannabis use: A systematic review of longitudinal studies. *Frontiers in Psychiatry*, 14, 1306439. <https://doi.org/10.3389/fpsyt.2023.1306439>

— Confirms that friends' cannabis use is the strongest, most consistent predictor of an adolescent's own use.

Verhulst, B., Neale, M. C., & Kendler, K. S. (2015). The heritability of alcohol use disorders: A meta-analysis of twin and adoption studies. *Psychological Medicine*, 45(5), 1061–1072. <https://doi.org/10.1017/S0033291714002165>

— The meta-analysis behind the “about 50% heritable” figure for alcohol use disorder.

Wakeman, S. E., Larochelle, M. R., Ameli, O., Chaisson, C. E., McPheeters, J. T., Crown, W. H., ... Sanghavi, D. M. (2020). Comparative effectiveness of different treatment pathways for opioid use disorder. *JAMA Network Open*, 3(2), e1920622.

<https://doi.org/10.1001/jamanetworkopen.2019.20622>

— Finds that only buprenorphine and methadone — not detox or counseling alone — reduced overdose in opioid use disorder.

Witkiewitz, K., Pfund, R. A., & Tucker, J. A. (2022). Mechanisms of behavior change in substance use disorder with and without formal treatment. *Annual Review of Clinical Psychology*, 18, 497–525. <https://doi.org/10.1146/annurev-clinpsy-072720-014802>

— Identifies self-efficacy as one of the most robust mechanisms behind lasting change.

Wright, M. F. (2025). Racial disparities in outpatient substance use disorder treatment completion: Trends and changes from 2004 to 2024. *International Journal of Environmental Research and Public Health*, 22(2), 278.

<https://doi.org/10.3390/ijerph22020278>

— Documents persistent racial disparities in who completes substance use treatment.

Zucker, R. A., Heitzeg, M. M., & Nigg, J. T. (2011). Parsing the undercontrol/disinhibition pathway to substance use disorders: A multilevel developmental problem. *Child Development Perspectives*, 5(4), 248–255.

<https://doi.org/10.1111/j.1750-8606.2011.00172.x>

— Traces poor self-control in early childhood as a reliable developmental predictor of later substance problems.

Critiques & debates on the brain-disease model

Heilig, M., MacKillop, J., Martinez, D., Rehm, J., Leggio, L., & Vanderschuren, L. J. M. J. (2021). Addiction as a brain disease revised: Why it still matters, and the need for consilience. *Neuropsychopharmacology*, 46(10), 1715–1723.

<https://doi.org/10.1038/s41386-020-00950-y>

— A refined defense of the brain-disease model arguing addiction is “probabilistic, not deterministic.”

Lewis, M. (2017). Addiction and the brain: Development, not disease. *Neuroethics*, 10(1), 7–18. <https://doi.org/10.1007/s12152-016-9293-4>

— Argues the brain changes in addiction reflect normal learning and development rather than disease.

Lie, A. K., Hansen, H., Herzberg, D., Mold, A., Jauffret-Roustide, M., Dussauge, I., ... Campbell, N. D. (2022). The harms of constructing addiction as a chronic, relapsing brain disease. *American Journal of Public Health*, 112(S2), S104–S108.

<https://doi.org/10.2105/AJPH.2021.306645>

— Cautions that an exclusively brain-disease framing can crowd out the social determinants of addiction.

Questions:

1. What is the main argument regarding the label of addiction as a 'brain disease'?
 - A. It is universally accepted
 - B. It is debated and not universally agreed upon
 - C. It is a proven fact with no exceptions
 - D. It is only a psychological issue

2. What does the biopsychosocial model suggest about the causes of addiction?
 - A. Addiction is solely caused by biological factors
 - B. Addiction is a result of psychological factors alone
 - C. Multiple factors including biological, psychological, and social factors interact to produce addiction
 - D. Addiction is only influenced by social factors

3. According to the document, what is a significant change in the brain due to repeated substance use?
 - A. The brain's reward system becomes more responsive
 - B. The brain's stress systems become less triggered
 - C. The brain's motivational circuits are reshaped
 - D. The brain's cognitive functions improve

4. What does the term 'heritability' refer to in the context of addiction?
 - A. The percentage of addiction that is caused by environmental factors
 - B. The likelihood of addiction being passed down through generations
 - C. The total genetic makeup of an individual
 - D. An estimate of how much variation in a trait is explained by genetic differences

5. What is one of the key components that the biopsychosocial model addresses in addiction treatment?
 - A. Multiple factors must be addressed in prevention and treatment programs
 - B. Social factors are irrelevant
 - C. Only biological factors should be treated
 - D. Psychological factors are the only focus

6. What is the primary psychological principle that explains the reinforcement of substance use behaviors according to the document?

- A. Classical conditioning
- B. Operant conditioning
- C. Negative reinforcement
- D. Cue reactivity

7. Which type of impulsivity is most closely linked to addiction as mentioned in the document?

- A. Positive urgency
- B. Self-control
- C. Impulsive decision-making
- D. Negative urgency

8. What is the main challenge faced by clients who use substances to escape negative feelings?

- A. Finding healthier excitement
- B. Building self-efficacy
- C. Tolerating distress
- D. Identifying cues

9. According to the document, what is a significant predictor of poorer treatment outcomes in substance use recovery?

- A. High self-efficacy
- B. Low impulsivity
- C. High impulsivity at the start of treatment
- D. Strong family relationships

10. What does the document suggest is essential for maintaining gains from contingency management?

- A. Using medication alone
- B. Skill-building alongside rewards
- C. Avoiding triggers completely
- D. Focusing solely on abstinence

11. What is the primary reason that the interaction of various factors contributes to addiction, according to the document?

- A. Biological factors alone are sufficient
- B. Psychological factors are the only cause

C. The combination of biology, temperament, learning, and environment creates the problem

D. Social factors are irrelevant

12. Which medication is specifically mentioned as a standard treatment for alcohol withdrawal in the document?

A. Naltrexone

B. Acamprosate

C. Buprenorphine

D. Benzodiazepines

13. What does the document suggest about the relationship between peers and substance use?

A. Peers have no influence on substance use

B. Peer behavior is a strong predictor of an individual's substance use

C. Only family influences substance use

D. Peers are less influential than media

14. According to the document, what is a significant barrier in substance use treatment across different groups?

A. Equal access to treatment for all

B. The lack of social support

C. The effectiveness of medication-assisted treatment

D. Racial disparities in treatment completion

15. What is the document's stance on recovery from substance use disorders?

A. Recovery is a common outcome and can happen in various ways

B. Recovery is rare and difficult

C. Recovery only occurs with formal treatment

D. Recovery is a linear process