ARTICLE REVIEW

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Memory Reconsolidation and Its Clinical Application in Psychotherapy: A Narrative Review

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ABSTRACT

Introduction: Psychotherapy is widely used to reduce emotional distress, yet relapse and incomplete long-term change remain common challenges. Many therapeutic approaches improve symptoms without fully changing the emotional learning that maintains maladaptive responses. In this context, memory reconsolidation has been proposed as a neurobiological process that may help explain how lasting emotional change can occur in psychotherapy. **Methods:** This narrative review summarizes theoretical and empirical work on memory reconsolidation in clinical contexts. Sources were selected to integrate findings from neuroscience with applications in psychotherapy. The review focuses on how emotional memories become open to change, the conditions required for this process to occur, and how these processes have been applied across different therapeutic approaches, supported by existing evidence. **Results:** The literature reviewed in this article suggests that memory reconsolidation is a natural biological process in which reactivated memories can change when new, mismatching experiences occur. Across different forms of psychotherapy, effective clinical procedures tend to follow a shared sequence that includes experiential memory retrieval, prediction error, and updating emotional learning. Findings from experimental studies, clinical protocols, and case-based reports suggest that interventions engaging this process may support more lasting therapeutic outcomes and reduce relapse when the required conditions are met. **Conclusions:** Memory reconsolidation is a basic mechanism that can be used across different forms of psychotherapy. Although promising, its clinical use depends on several limiting factors, including timing, emotional regulation, and contextual conditions. Greater attention to these factors may help refine psychotherapeutic approaches and support more lasting emotional change.

Keywords: Memory Reconsolidation, Psychotherapy, Prediction Error, Emotional Learning

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INTRODUCTION

Psychotherapy is widely recognized as an effective approach for reducing emotional distress. However, clinical practice continues to face several persistent challenges, including early discontinuation of psychotherapy due to its lengthy duration and difficulties in achieving lasting symptom resolution[1]. Although many patients improve during treatment, symptoms frequently return after therapy ends, a phenomenon commonly described as relapse. This pattern suggests that many therapeutic approaches reduce distress by suppressing maladaptive emotional responses without changing the core emotional learning that maintains these symptoms[1,2]. Consequently, the emotional memories underlying these symptoms remain intact and can be reactivated under stress or changes in context[3]. This limitation highlights the need to better understand the internal mechanisms that support lasting change rather than temporary symptom relief[1,4].

In recent years, memory reconsolidation has gained increasing attention as a potential mechanism underlying long-term therapeutic change. Memory reconsolidation refers to a neurobiological process in which an established memory, once reactivated, briefly enters a flexible or unstable state before becoming stable again[5]. During this time window, which typically lasts several hours, the memory can be modified or updated with new information[6]. Importantly, research shows that memory retrieval alone is not sufficient to initiate reconsolidation. Instead, the process requires a prediction error, defined as a mismatch between what the memory predicts and what is actually experienced, in order to destabilize the existing memory trace[1,7].

Memory reconsolidation is not an artificial technique imposed on the brain, but a natural biological process that allows memories to be updated as experiences change[4,5]. When used in psychotherapy, this process offers the possibility of changing the emotional basis of memories, rather than only controlling how they are expressed[1,8]. Recent research suggests that memory reconsolidation may function as a shared mechanism of change, linking basic neuroscience with clinical practice across different forms of psychotherapy[4,9].

This article reviews recent research on memory reconsolidation and its application in psychotherapy. It integrates findings from key theoretical work to consider memory reconsolidation as a possible shared mechanism of therapeutic change across different psychotherapeutic approaches. The review focuses on the neurobiological conditions required for reconsolidation to occur, including memory retrieval and prediction error, as well as clinical procedures that may use this process. It also discusses key boundary conditions and challenges that limit the clinical application of reconsolidation-based approaches. These findings may help explain how psychotherapy can lead to lasting emotional change and guide future research and clinical work.

METHODS & MATERIALS

This narrative review provides an overview of research on memory reconsolidation in clinical contexts. The material includes textbooks published within the last decade and peer-reviewed journal articles from recent years. These sources integrate findings from neuroscience with applications in psychotherapy. The review focuses on the biological processes involved in memory updating, the conditions required for reconsolidation to occur (such as prediction error), and evidence supporting its effectiveness across a range of psychological conditions and therapeutic approaches.

REVIEWS

1. Historical Development of Memory Reconsolidation

For much of the twentieth century, memory research was guided by the idea that once memories were formed, they became

stable and difficult to change[4,10]. As a result, psychotherapy was widely understood to work by reducing emotional responses or by forming new, competing memories, rather than by changing the original memory itself[5].

Recent research marks a fundamental shift from classical consolidation theory, showing that reactivated fear memories can briefly enter a labile state and require new protein synthesis to restabilize, a process known as memory reconsolidation[4,6]. These findings indicate that memory is dynamic and can be modified upon recall.

Later studies showed that memory retrieval alone is not enough to trigger reconsolidation. A prediction error is required for a memory to become unstable and open to change. This occurs when there is a mismatch between what the memory expects and what actually happens[4,11]. When this condition is met, a brief “reconsolidation window” opens, allowing the memory to be updated, weakened, or altered before it is stabilized again[5].

Since then, research has expanded from animal studies to clinical work with humans. These findings provide a new biological basis for psychotherapy. Together, they suggest that different therapeutic approaches, including behavioral and experiential therapies, as well as arts-based therapies, may alter long-term traumatic memories by engaging the reconsolidation process[6,11].

2. Neurophysiological Mechanisms of Memory Reconsolidation

Human memory is not a fixed record of past events, but a dynamic process that is reconstructed over time. At the biological level, memory formation involves activity-dependent changes in synaptic connections across distributed neural networks. Within this system, the hippocampus plays a key role in episodic memory, while the amygdala is especially important for emotional memory[8,10].

The amygdala and hippocampus are closely connected and together form a key circuit for emotional processing. When a distressing memory is recalled, hippocampal–amygdala interactions activate the amygdala, which then coordinates a range of bodily stress responses. The activated amygdala influences several brain regions, including the hypothalamus, which activates the stress hormone system; the periaqueductal gray, which supports fight, flight, or freeze reactions; the parabrachial nucleus, which affects breathing; and the locus coeruleus, which increases arousal through norepinephrine release. The combined activation of these systems may explain the strong physical and emotional reactions that often occur when traumatic memories are recalled[12].

Not all experiences, however, are successfully integrated into long-term memory. While moderate emotional activation can support memory formation, extreme stress can disrupt normal hippocampal functioning[13]. In such situations, the hippocampus may fail to organize the experience into a coherent narrative[14]. Instead, the memory may be stored in a fragmented form across other brain regions[13]. This helps explain why traumatic memories are often vivid and intrusive but lack a sense of distance or safety. Sleep disturbances, which are common after trauma, may further interfere with the consolidation of these memories into a stable and integrated form[13].

Many traditional psychotherapeutic approaches, such as cognitive behavioral therapy, rely on top-down processes that aim to strengthen prefrontal control over emotional responses generated by the amygdala[12]. However, during periods of intense emotional activation, this regulatory system may function less effectively, limiting the effectiveness of cognitive strategies[15]. In contrast, memory reconsolidation focuses on changing emotional learning at its source by updating the memory itself, rather than relying

solely on cortical control of emotional expression[1].

A key concept that distinguishes modern views of memory from earlier theories is lability. When a memory is retrieved, it can shift from a relatively stable state to a temporarily unstable one[4,10]. During this unstable phase, the memory must be actively maintained by the brain. If this process is disrupted or new information is introduced, the memory can be changed[2,16]. This period of instability defines a limited reconsolidation window, which typically lasts several hours after the memory is reactivated and allows lasting memory change to occur[1,16]. For clinical practitioners, this points to a limited biological window of opportunity. Corrective therapeutic experiences need to occur within the reconsolidation window after a memory is reactivated, before it stabilizes again and becomes harder to change[3,5].

At the neurobiological level, reconsolidation is fundamentally different from extinction. Extinction involves forming a new inhibitory memory that suppresses the original fear response without removing the original memory itself[5,15,17]. However, extinction leaves the original fear memory intact, making it vulnerable to relapse[4,15]. In contrast, reconsolidation directly targets the original fear memory, allowing it to be modified and potentially supporting more lasting therapeutic change[2]. The key condition needed to initiate this modification process is prediction error. Research shows that recalling a memory alone does not make it unstable. When the retrieved experience fully matches prior expectations, the memory remains stable and continues to guide predictions. Destabilization occurs only when the brain detects a meaningful mismatch between what is expected and what actually happens, a process known as prediction error, which signals that the memory may need to be updated[7,18].

Recent findings suggest that this process involves a specific brain circuit linking the hippocampus and the locus coeruleus[19]. When a memory is reactivated, the hippocampus signals the level of prediction error to the locus coeruleus. In response, the locus coeruleus releases neuromodulators such as norepinephrine and dopamine, which influence how memories are processed[19]. Smaller prediction errors, particularly those associated with dorsal hippocampal activity, tend to support the updating of existing memories through reconsolidation[19]. In contrast, very large prediction errors, linked more strongly to ventral hippocampal activity, may signal that the experience is fundamentally different from past learning. In such cases, the brain is more likely to form a new memory rather than modify the original one[19]. Dopamine appears to support this process by strengthening communication between memory-related brain regions, including the hippocampus and the amygdala[20].

3. Application in Psychotherapy

Building on established principles of memory lability and prediction error, the clinical use of memory reconsolidation depends on a structured sequence of experiences rather than a specific therapeutic technique. Across different psychotherapeutic approaches, successful engagement of reconsolidation follows a shared process involving memory reactivation, expectancy violation, and experiential updating of emotional learning[1,4,21].

A central element in this process is prediction error. When expectations are not met, existing memory links become unstable and open to change. This helps explain why prediction error during memory retrieval appears necessary for reconsolidation to occur[7.18]. In fear learning, prediction error can either increase or reduce fear responses, depending on whether outcomes are more or less threatening than expected. Research suggests that these processes involve several brain regions related to memory, emotion, and motivation, including the

amygdala, hippocampus, ventral striatum, and dopamine-related midbrain systems[18,20].

Building on these mechanisms, Ecker and colleagues propose that memory reconsolidation is not a specific therapeutic technique but a general mechanism through which lasting change can occur in psychotherapy[1,21]. They describe a consistent sequence of steps, known as the Therapeutic Reconsolidation Process (TRP), for clinical application.

1. **Reactivation:** The client must experientially access the target emotional memory or schema. This involves more than intellectual recognition of a problem; the memory must be emotionally or physically felt in the present moment, such as through fear, tension, or other bodily sensations[21,22].
2. **Mismatch or juxtaposition:** This is the most critical step. While the memory is active, the therapist facilitates an experience that clearly contradicts the expectations embedded within that memory[1]. For example, a client who anticipates rejection may instead experience acceptance. Holding these conflicting experiences simultaneously generates a strong prediction error, rendering the memory open to modification[1,19].
3. **New learning or revision:** Following this mismatch, the previously activated emotional memory becomes open to change. During this period, new experiential information related to safety, competence, or acceptance can revise earlier emotional learning before the memory stabilizes again[22].

4. Psychotherapies Utilizing Reconsolidation

Research suggests that memory reconsolidation may serve as a transdiagnostic mechanism of change across different forms of psychotherapy. Some therapeutic approaches appear to engage this mechanism indirectly, whereas others have been developed specifically to activate it.

1. **Coherence Therapy:** This approach is specifically designed to create the mismatch experiences needed for memory reconsolidation. Clients are guided to identify the emotional patterns that underlie their symptoms. The therapist then helps the client hold this emotional understanding alongside new, contradictory personal experiences. Experiencing these opposing meanings at the same time creates a prediction error, which makes the underlying emotional learning open to change[1,21].
2. **EMDR (Eye Movement Desensitization and Reprocessing):** Although EMDR was originally explained using different theoretical models, more recent accounts suggest that applying bilateral stimulation during memory reactivation may allow new emotional learning to be integrated through memory reconsolidation[23].
3. **RTM (Reconsolidation of Traumatic Memories) Protocol:** RTM is a structured intervention that uses dissociation and visualization during memory recall. Clients are guided to revisit traumatic memories in a controlled and psychologically safe manner, for example by viewing the event from a third-person perspective or imagining it as a black-and-white scene. A key element of the protocol is the rapid “rewind” technique, in which the traumatic sequence is mentally replayed backwards from end to beginning. This procedure is intended to reduce physiological arousal and disrupt habitual emotional responses during recall, creating conditions that may generate prediction error and support changes in the emotional meaning of traumatic memories

through reconsolidation-related processes[24].

4. **RESET (Reconsolidation, Exposure, and Short-term Emotional Transformation):** RESET is a brief intervention developed for post-traumatic stress disorder (PTSD) that combines elements of exposure therapy with current models of memory reconsolidation. The protocol is delivered in an intensive, short-term format and involves repeated activation of traumatic memories through guided exposure. At the same time, it supports emotional processing and the integration of new meanings. Through this approach, RESET is proposed to engage reconsolidation-related mechanisms that may allow traumatic memories to be updated and may lead to short-term emotional change[9].
5. **Experiential and Arts Therapies:** Theoretical models suggest that expressing traumatic experiences through art or enactment allows clients to engage with traumatic material in a different and more observable form. This process can help reshape emotional meaning by offering new perspectives on the original experience. The contrast between the internal traumatic memory and the external artistic expression may create an experiential mismatch, which can generate the prediction error needed for memory updating through reconsolidation-related processes. Importantly, these changes may occur through embodied and non-verbal experiences, rather than relying mainly on explicit verbal processing[11,22,25].
6. **Internal Family Systems (IFS):** IFS is a psychotherapy approach that can be understood within a memory reconsolidation framework. It views the mind as made up of different “parts” that serve specific roles. Some parts carry painful or traumatic experiences, while others work to manage daily life or respond quickly to emotional distress. Alongside these parts is a core sense of self, described as calm, compassionate, and able to observe inner experience. From a reconsolidation perspective, IFS engages memory updating through a process known as “unburdening.” In therapy, the client is guided to access a traumatic memory held by a vulnerable part while remaining connected to the sense of safety and acceptance associated with the self. Holding these two experiences together creates a prediction error: instead of being overwhelmed by pain, the client experiences safety and support. This mismatch allows the original emotional learning linked to the traumatic memory to be updated, reducing its emotional intensity[1]. This framework aligns with current descriptions of IFS as a psychotherapy approach applied across a wide range of psychological conditions[26].
7. **Trauma Processing Therapy (TPT):** TPT is an integrative psychotherapeutic framework grounded in memory reconsolidation, synergizing hypnoanalysis with ego state therapy, particularly drawing from Internal Family Systems (IFS). In this approach, ego states are categorized by their functional roles: "The Person" represents the authentic, compassionate self with a drive for recovery; "The Pain" is the part holding traumatic memories, emotions, and beliefs; "The Protector" serves as an internal defense mechanism; and "The Persona" acts as a protective interface for navigating external reality. All parts share the benevolent intention of shielding "The Pain" from further suffering. Adhering to the principles of memory reconsolidation-based therapy, TPT follows four distinct

stages: Choosing Traumatic Memories, Willingness to Process, Processing Memories, and the Uninterrupted Cycle. The clinical application of this approach has been documented in published case reports addressing Prolonged Grief Disorder and sexual abuse[27,28]

5. Target Patient Populations, Boundary Conditions, and Challenges

Target populations and clinical limitations

Psychotherapy based on memory reconsolidation has shown promise for conditions driven by maladaptive emotional learning, particularly post-traumatic stress disorder and phobias. It has also been conceptually extended to other conditions, such as depression and borderline personality disorder[1,21]. However, this approach has important limitations. One key constraint is the narrow time window in which memory updating can occur[3,16]. There is also a risk that memory retrieval may overwhelm some patients, particularly when emotional arousal becomes excessively intense, potentially shifting the process away from reconsolidation[5,17]. In addition, reconsolidation-based interventions can be difficult to apply under real-world conditions, as factors such as individual stress states and contextual variables may prevent memory destabilization from occurring. These boundary conditions highlight the need for careful clinical application and may require reconsolidation-based work to be integrated with other therapeutic strategies that support patient safety and engagement[29].

Boundary conditions and critical challenges in the field

Beyond these clinical challenges, research shows that not every instance of memory retrieval leads to destabilization. Whether a memory becomes open to change or remains stable depends on several boundary conditions.

- **Trace dominance (memory strength and age):** Repeated distressing experiences can strengthen the associated emotional memory. Older and more strongly encoded memories tend to be more resistant to destabilization[29,30]. As a result, long-standing traumatic memories may require a stronger or more novel prediction error to engage reconsolidation than more recent or less established memories. In such cases, simple retrieval cues may be insufficient[29].
- **Reactivation dynamics:** The way a memory is reactivated is also critical. If exposure to the memory cue is too brief, the memory may not be fully retrieved. Conversely, if reactivation is prolonged without introducing a mismatch, the process may shift toward extinction. In this case, a new inhibitory memory may be formed instead of modifying the original memory through reconsolidation[3,30].
- **Retraumatization:** Clinical reports indicate that when traumatic memories are strongly reactivated with high emotional arousal but without sufficient therapeutic containment or a sense of safety, symptoms may worsen rather than improve[31]. Experimental and theoretical work further suggests that memory retrieval alone does not reliably lead to destabilization and, under certain conditions, may even strengthen existing fear memories instead of modifying them[7.30]. From a reconsolidation perspective, this underscores that memory reactivation can be risky if it is not paired with conditions that create a meaningful prediction error and support memory updating.
- **Temporal dynamics:** In addition to the timing of the reconsolidation window, how memory reactivation is carried out also matters. Experimental studies

show that features of retrieval, such as how long it lasts and how it is spaced over time, influence whether reactivation leads to memory updating or shifts toward extinction. In clinical practice, this suggests that rigid or repetitive focus on the same memory may be less effective. Instead, therapy may benefit from gently shifting attention around the most emotionally important moments of the experience, such as what happened just before, during, or after the event, to increase the chance that the memory becomes open to change[5].

- **Sex differences:** Individual differences also influence reconsolidation outcomes. Biological sex, in particular, appears to affect how fear memories respond to intervention. While females often show greater resistance to standard extinction-based approaches, recent findings suggest that retrieval-based interventions are more effective in preventing the return of fear in females than in males. These results point to the potential value of reconsolidation-based approaches in addressing sex-related differences in trauma treatment outcomes[5].
- **Ongoing stressors and environmental context:** The effectiveness of memory reconsolidation is strongly influenced by a person's current environment. Research on fear learning describes a process known as renewal, in which fear responses that appear reduced in a safe therapeutic setting return when individuals re-enter the context in which the memory was originally formed. This context dependence suggests that lasting change is harder to achieve when individuals remain in environments that repeatedly activate threat-related expectations. For example, individuals processing traumatic memories related to parental relationships may struggle to sustain improvement if they continue to live in the same household where the trauma occurred. In such cases, repeated exposure to familiar cues and the absence of a stable sense of safety may weaken therapeutic gains and increase the likelihood that fear responses return rather than resolve[32].
- **Defining prediction error:** A major challenge concerns how prediction error can be clearly defined and measured in clinical settings. What counts as a sufficiently meaningful mismatch or "surprise" differs across individuals and contexts[33]. When a retrieval experience does not clearly violate a patient's expectations, memory destabilization may not occur, and the memory may remain unchanged[18,33].
- **Stabilization:** Successful memory reconsolidation requires that the client is in a stable and emotionally regulated state. Many individuals initially present with overwhelming emotional distress that interferes with the ability to safely recall traumatic material. In such cases, preliminary stabilization is often needed before reconsolidation-based work can begin. This may include supportive psychotherapy and, when clinically appropriate, medication to reduce acute emotional distress. Once the client can tolerate memory activation without becoming overwhelmed, the reconsolidation protocol can be applied[1].

6. Case Reports and Clinical Evidence

The previous section described psychotherapeutic approaches that may engage reconsolidation, while the next section focuses on empirical and clinical evidence supporting these approaches. A growing body of literature provides preliminary support for the clinical relevance of memory reconsolidation across different

populations and psychological conditions. Beyond theoretical models, findings from case reports, pilot studies, and early clinical protocols suggest that interventions targeting the reconsolidation window can lead to lasting therapeutic change when applied under appropriate conditions.

Trauma and PTSD

In trauma-focused psychotherapy, a case study suggests that EMDR may engage memory reconsolidation. The intervention involved bringing the client's intense memory of childhood helplessness into awareness while simultaneously experiencing present-day safety. This juxtaposition appeared to destabilize the traumatic memory and allow new, adaptive information to be integrated. Bilateral stimulation has been proposed to support this process by taxing working memory during retrieval, reducing emotional intensity and facilitating memory updating[23].

Reconsolidation-based approaches have also been applied to more complex trauma presentations. A pilot quasi-experimental study conducted in India examined the use of the RTM protocol in individuals with complex PTSD and multiple adverse childhood experiences. The study reported reductions in PTSD after five sessions, and these improvements were sustained at a three-month follow-up assessment, suggesting that reconsolidation-oriented interventions may be feasible even in cases involving cumulative and prolonged trauma[24].

Similarly, the RESET protocol is an intensive, short-term intervention that combines exposure-based techniques with principles of memory reconsolidation for the treatment of PTSD. Early findings suggest that this approach may reduce symptoms by repeatedly activating traumatic memories and creating conditions, such as expectancy violation, that support modification of the underlying fear memory through reconsolidation-related processes[9].

Prolonged grief disorder

Memory reconsolidation has also been applied to the treatment of prolonged grief disorder (PGD), a condition that often responds poorly to standard antidepressant and psychotherapeutic treatments. A recent case report described a patient who had experienced PGD for more than two decades and had previously been misdiagnosed with dysthymia. Treatment was conducted using TPT, an integrative approach that combines hypnoanalysis with ego state techniques to engage memory reconsolidation[28].

During therapy, the patient was guided to revisit the memory of the loss while also accessing an internal sense of safety and compassion. This pairing created a corrective emotional experience that allowed the grief-related memory to be updated. The report described a marked reduction in grief symptoms following a single session, with maintained improvements at 3-month and 6-month follow-up assessments, suggesting that reconsolidation-based approaches may help address the enduring emotional patterns that sustain chronic grief[28].

Chronic pain

Evidence for memory reconsolidation has also begun to emerge in the context of chronic pain. A one-year follow-up study of an art therapy based pain protocol reported lasting reductions in pain intensity, pain interference, and use of pain medication. Participants described sustained physiological, psychological, and coping-related improvements that persisted for up to 9-20 months. The protocol focused on expressing pain-related experiences through artistic activities and revising the emotional meanings associated with pain. By linking the activation of pain-related memories with new, supportive representations, the intervention appeared to create prediction errors that allowed maladaptive pain-related learning to be updated. Together, these findings suggest that reconsolidation-oriented interventions may support durable improvements in both

subjective pain experience and quality of life for individuals with chronic pain[25].

CONCLUSION

Memory reconsolidation provides a useful neurobiological framework for understanding how psychotherapy can lead to lasting emotional change. Reconsolidation-based approaches aim to change the underlying emotional learning that maintains maladaptive responses. By reactivating established memories and introducing prediction error, psychotherapy may allow these memories to become open to change. This process allows the original emotional learning to be updated rather than merely suppressed.

Historically, memory was viewed as a stable record of past events. Research on memory reconsolidation has changed this view by showing that retrieved memories can briefly become unstable and open to change before they are stored again. This adaptive process allows memories to be updated based on current experience and provides a biological basis for therapeutic change that was not accounted for in earlier learning models.

At the neurobiological level, emotional memory change depends on interactions between the hippocampus and the amygdala. Reconsolidation involves temporary destabilization of the original memory itself. During this process, the emotional component of the memory can be revised, reducing excessive limbic activation commonly seen in trauma-related conditions.

For reconsolidation to occur in psychotherapy, the memory must be reactivated in a context that produces a prediction error, meaning that what happens differs from what the brain expects. This mismatch signals that the memory is no longer accurate and opens a limited window during which new information can be integrated. Once the reconsolidation window opens, the therapist guides the client through an experience that clearly contradicts the expectations held in the original memory. This contrast creates a strong prediction error, allowing new emotional information to update the memory before it stabilizes again.

Evidence suggests that this mechanism operates across diagnostic categories. Different therapeutic approaches, including Coherence Therapy, EMDR, RTM, RESET, IFS, and TPT, use different techniques but follow a similar sequence. Each approach combines memory reactivation with an experience that contradicts the original emotional expectation, allowing maladaptive emotional learning to be updated.

At the same time, the clinical use of reconsolidation is shaped by important limitations. Memory age and strength, timing, individual biological factors, and ongoing environmental stress can influence whether reconsolidation occurs. In addition, reactivating traumatic memories without sufficient safety or prediction error may worsen symptoms rather than reduce them. These risks highlight the need for careful and precise clinical application.

Recent clinical evidence also supports the relevance of reconsolidation-based interventions across a range of conditions, including post-traumatic stress, prolonged grief, and chronic pain. Case reports and early studies suggest that when therapy directly targets emotional memory updating, it may lead to more lasting symptom improvement, particularly in conditions that respond poorly to traditional cognitive or exposure-based approaches.

Future research should focus on identifying when and how emotional memories become open to change in clinical settings, how prediction error can be reliably generated during psychotherapy, and which individuals are most likely to benefit from reconsolidation-based interventions. Progress in these areas may strengthen the empirical foundation of memory reconsolidation and support a more integrated understanding of therapeutic change across different psychotherapeutic approaches.

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