Transforming the Brain: from Addiction to Recovery

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Disclosures

- Financial
  - Georgia Professionals Health Program, Inc., a 501(c)3 foundation (Salary)
  - Principal, Earley Consultancy, LLC (Salary)
  - DynamiCare Health, Inc. (Stock)
  - Two Books related to this talk:
    - RecoveryMind Training
    - Recovery Skills Manual for RecoveryMind Training
- Non-financial
  - President, American Society of Addiction Medicine (ASAM)
  - Immediate Past President, Federation of State Physician Health Programs (FSPHP)

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How is Addiction Care Changing?

- Good: Today, addiction is more often recognized as a brain disease by the public.
- Good: Standards for the evaluation and placement of patients in treatment (e.g., The ASAM Criteria) provide a platform for treatment research.
- Good: Treatment is integrating into our healthcare system.
- Good: Addiction will be properly recognized as a chronic condition, where care tapers over long periods of time.

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How is Addiction Care Changing?

- Problematic: With the emergence of effective medications for Opioid Use Disorder, the core components of quality addiction care are viewed as quaint and unimportant and, at times and by some, unnecessary.
- Problematic: Healthcare workers who have recently developed interest in addiction care have no concept of recovery, as witnessed by traditional treatment providers and recovery fellowships such as A.A. and N.A.
- Problematic: Fixed-interval treatment will have to be replaced by treatment based upon individual patient progress.

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The Neurophysiology of Addiction in Thirteen Slides

Transforming the Brain: from Addiction to Recovery

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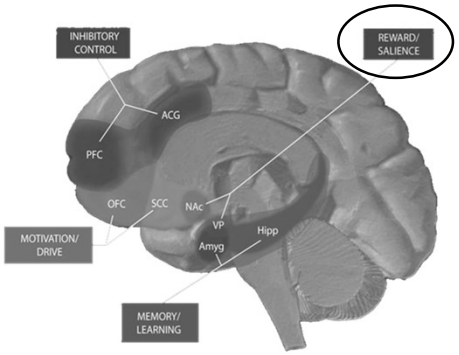
Addiction affects many Brain Centers



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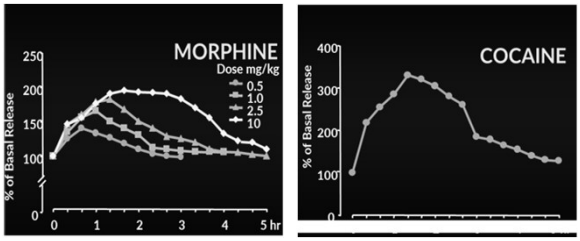
The Effect of Certain Drugs on Dopamine Levels



Adapted from: Di Chiara and Imperato, Proceedings of the National Academy of Sciences USA, 1988.

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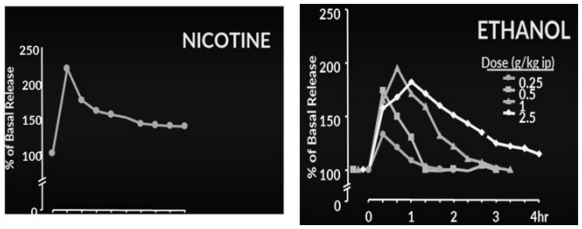
Effects of Drugs on Dopamine Levels



Adapted from: Di Chiara and Imperato, Proceedings of the National Academy of Sciences USA, 1988.

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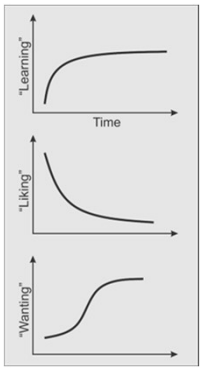
Incentive Salience

- It is not pleasure that drives addiction but "Incentive Salience"
- "This explains why life's intense pleasures are less frequent and sustained than intense desires."[1]



[1] Berridge, K. C. and T. E. Robinson (2003). "Parsing reward." Trends in Neurosciences 26(9): 507-513.

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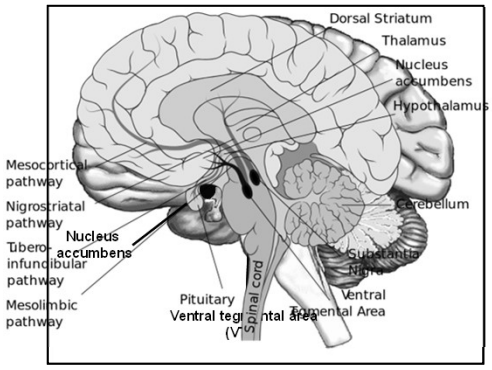
Dopamine Reward Circuit



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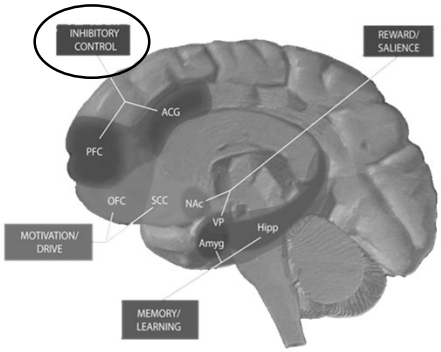
Addiction affects many Brain Centers



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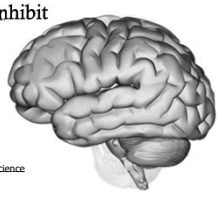
Addiction derails Inhibitory Controls

- The dorsolateral (DLPC) and orbitofrontal (OFC) prefrontal cortices are involved in inhibitory decisions, immediate versus delayed responses and weighing the importance of various goal-related behaviors.
- Addiction decreases sensitivity to non-drug reinforcers.
- Addiction decreases one's ability to inhibit maladaptive or disadvantageous behaviors.



Goldstein, R. Z. and N. D. Volkow (2011). "Dysfunction of the prefrontal cortex in addiction: neuroimaging findings and clinical implications." Nature Reviews: Neuroscience 12(11): 652-669.

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What does this mean for Treatment and Recovery?

- In most cases, external constraints must be used to interrupt destructive use.
- We cannot expect individuals in early recovery to execute conscious, effective decisions not to use.
- Environmental cues, emotional states and stress induced craving must be minimized early in recovery.
- Exposure to even indirect substance triggers must be delayed until inhibitory controls come back online.

Loss of Inhibitory Controls

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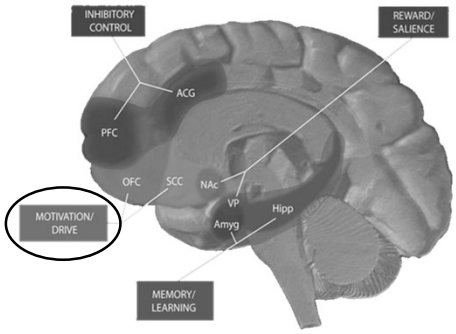
Addiction affects many Brain Centers



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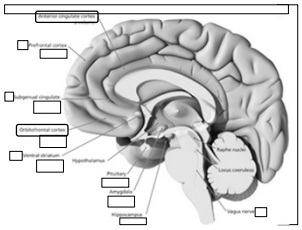
Addiction hijacks Attention and Motivation

When craving occurs:

- Pathways in the Orbitofrontal Cortex activate well learned drug foraging behaviors.
- The Anterior Cingulate Cortex ensures sustained attention on drug procurement behaviors.



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What does this mean for Treatment and Recovery?

- Attentional problems are expected. Do not reflexively prescribe medications.
- One way of reclaiming attention is to track what is distracting (i.e., cravings). This means even the smallest craving should be acknowledged in early recovery.
- We should never judge an individual by stating "He is not motivated to get better."
- Contingency Management techniques may help rewire the brain, rebuilding the motivation for healthier goals.

Attention and Motivation

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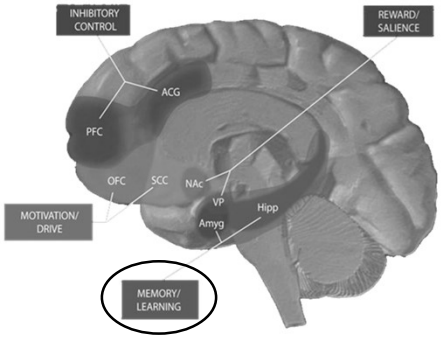
Addiction affects many Brain Centers



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What does this mean for Treatment and Recovery?

- Relapse is entrained at the procedural level, is automated, rigid, life-long and at least partially unconscious.
- Listening to lectures about what to do in recovery, by themselves, is ineffective. Recovery skills must be practiced.

Addiction and Procedural Memory

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What is RecoveryMind Training?

Transforming the Brain: from Addiction to Recovery

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An Addiction is a dangerous territory, never walk through it alone

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It slowly dawned on me that my daily alcohol consumption was a problem. I decided that I would muster my strength to fight my compulsion to drink.

I would [illegible] for brief periods of time. My hard fought abstinence would collapse into binge drinking- something new to me.

The harder I fought, the worse it got. Once the inevitable binge erupted, each fall into oblivion became more ferocious and self-destructive than the last.

Something was plotting to kill me.

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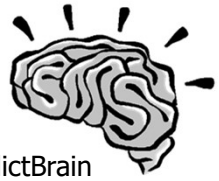

AddictBrain

Is the moniker for the entire compendium of neurophysiological effects of addiction; how it alters perceptions, motivations, actions, memories and beliefs.

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Thought of in this way, recovery is a type of retraining or learning anew many of the basic human processes.

It is rewiring of the brain that comes from education, behavioral change, emotional experience and values clarification.

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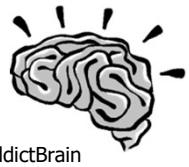
AddictBrain / RecoveryMind



AddictBrain

The sum of all brain responses, maladaptive associations and, most importantly, learning that occurs once an individual develops addiction.

RecoveryMind

The sum of the all of the behavioral, cognitive, emotional and spiritual retraining that the mind must undergo to attain recovery.

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Overview

- When one develops addiction, it overrides many of the brain's control mechanisms including the reward, motivation and attentional systems, and its memory and consciousness networks. Addiction hijacks each of these networks to its own ends, setting up a second tightly organized and efficient command and control system in the brain.
- We call this second control system is called AddictBrain. AddictBrain is produced by a complex set of brain systems that collude together, establishing a biological imperative to continue drug or alcohol use. Recognizing and accepting that AddictBrain is trying to destroy its host helps rally its victims, helping patients engage in treatment.

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RecoveryMind Training Does

- Encourage the appropriate use of addiction medications.
- Provide a road map for long term care
- Build a treatment process that can be applied for many months or even years.
- Encourage repeated reassessment as a patient's illness improves or regresses.
- Consider addiction a skill deficit and its treatment a type of learning or training. This decreases prejudice and removes judgementalism.

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RecoveryMind Training Does Not

- Provide an all-encompassing system to manage related conditions, e.g., it does not provide interventions for co-occurring psychiatric conditions.
- Suggest medications to use in a particular addiction disorder.
- Demand a particular level of care. In fact, it is useful at all levels of care.
- Evaluate disease severity directly. The ASAM Criteria, Continuum and other tools serve this function.
- Work in all stages of the Transtheoretical Model of Change. Using too early is counterproductive!

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Transtheoretical Stages of Change

1. PRECONTEMPLATION – Not yet considering possibility of change, active resistance to change, seldom appear for change without coercion.
2. CONTEMPLATION – Ambivalent, undecided, vacillating between whether the need exists for change or not, wants to change but also resists the changes needed.
3. PREPARATION – Takes client from decisions made in contemplation to the steps needed to change. Increasing confidence in the decisions needed for change.
4. ACTION – Specific actions intended to bring about change, overt modification of behavior and environment. Support/encouragement is essential at this stage to prevent dropout & regression.
5. MAINTENANCE – Sustaining the changes begun. Consolidate gains, learn alternative coping & problem-solving strategies, recognize emotional triggers for relapse.
6. RELAPSE & RECYCLING – Possible but not inevitable setbacks. Avoid becoming stuck and learn from mistakes to determine new cycle of change.
7. TERMINATION – Ultimate stage for all changers, person exits cycle of change without fear of relapse. Some problems terminated while others are kept in remission through ongoing maintenance efforts.

Prochaska, J, *The transtheoretical model of behavior change. The handbook of health behavior change. 2nd ed. 1998, New York, NY: Springer Publishing Co. 607.*

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RecoveryMind Training™ does not work with…

1. **PRECONTEMPLATION** – Not yet considering possibility of change, active resistance to change, seldom appear for change without coercion.
2. **CONTEMPLATION** – Ambivalent, undecided, vacillating between whether the need exists for change or not, wants to change but also resists the changes needed.
3. **PREPARATION** – Takes client from decisions made in contemplation to the steps needed to change. Increasing confidence in the decisions needed for change.

RecoveryMind Training will not be effective with patients in the precontemplation and contemplation stages of change. It should be used with extreme caution with patients in the preparation stage of change.

Such patients may be turned off by the aggressive language and hard line stance inherent in this model. They may think you are inaccurate, hyperbolic or see you as a fanatic. Instead of helping such patients engage in treatment, RMT will push them away.

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The Components of RecoveryMind Training

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The RMT Domains of Care

- The process of addiction recovery is, at its core, a learning process. The learning required is procedural learning (learning "how) and not declarative learning (learning "what"). All useful recovery skills must be acquired and practiced in treatment. Listening to lectures has little value.
- These skills (called Recovery Skills) are divided into 6 Domains:
  - Domain A – Addiction Containment
  - Domain B – Basic Recovery Skills
  - Domain C – Emotional Awareness and Resilience
  - Domain D – Internal Narrative
  - Domain E – Connectedness and Spirituality
  - Domain F – Relapse Prevention

Earley, PH, *RecoveryMind training : A Neuroscientific Approach to Treating Addiction*. 2017, Las Vegas: Central Recovery Press. 452 pages.

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RecoveryMind Definitions

- Recovery Skills: behaviors, concepts or thought patterns the addicted individual must learn and employ to facilitate crossing the gulf between addiction and recovery.
- Domain: A group of closely related recovery skills, collected together to help patients and staff focus on skill building in a specific area for a time in treatment.
- Worksheet: A patient or client completed form designed to increase insight or teach a skill between therapy sessions.
- Progress Assessment: An evaluation process completed by the patient and his or her therapist. The completed evaluation clarifies progress in treatment and completion of Recovery Skills.

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RecoveryMind Training
Putting it all together

Patients or Clients attain Recovery Skills (organized into Domains). The patient's initial evaluation determines which Recovery Skills are assigned and determines the order in which they are attained.

Patients practice recovery skills, assisted by Worksheets and Skills Groups. Improvement is self, peer (if available) and therapist evaluated using Progress Assessment tools.

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RecoveryMind Domains

- Domain A – Addiction Containment uses a combination of physical, social, contractual and biological measures to maintain remission. Patient acceptance and resistance to containment is explored in Domain A.
- Domain B – Basic Recovery Skills focuses on acquiring three central components of basic recovery. This includes, initial 12 Step work, learning and practicing meditation skills and building a daily self-reflection process, fit to the patient's style and needs.

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RecoveryMind Domains

- Domain C – Emotional Awareness and Resilience teaches patients to identify emotional states in themselves and others. Many patients may also need to learn and practice emotional resilience techniques.
- Domain D – Internal Narrative helps correct destructive self-talk and negative self-concept. This Domain also deepens a patient's understanding of their defense mechanisms that lead to maladaptive interpersonal styles and / or promote relapse.

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The RMT Domains

- Domain E – Connectedness and Spirituality teaches meaningful connection and healthy interdependence with others. In a natural extension this Domain builds a personal spiritual framework.
- Domain F – Relapse Prevention provides a cohesive framework for understanding cravings. It teaches the basic components of relapse prevention and helps patients construct a relapse prevention plan that is specific to his or her needs.

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Skill Acquisition in RMT

- There are many types of learning.
- RecoveryMind Training is not like learning a list of important dates in history.
- RecoveryMind Training is Procedural Learning—more like learning to ride a bicycle.

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Recovery Skills

Domain	Number of Recovery Skills
A	9
B	13
C	11
D	10
E	24
F	14

- A given patient will only be assigned a subset of these skills.
- Remember, Recovery Skills are **not** the acquisition of intellectual knowledge but that of practiced skills, that will automatically come into play to preserve disease remission.

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Domain A - Containment

Deeper into RMT Domains

- Addiction recovery combines external controls and accountability with motivation and actions that install recovery and prevent relapse.
- Containment is the first action – staff & patient must interrupt the addictive process before any real progress can occur.
- Patients view containment as intrusive at first, over time it feels helpful.
- Containment is intense and multifocal at first and tapers over time.

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Domain B – Basic Recovery Skills

Deeper into RMT Domains

- If this is a patient's first treatment, he or she often begins work in Domain B.
- Three main components to Domain B:
  - Daily Reflection Skills: Teaches patients to be self reflective, plan their day and take a daily personal inventory.
  - Mindfulness Meditation: Multiple benefits including craving management, calming emotional dissonance, decrease impulsiveness.
  - Twelve Step Work: Teaches disease acceptance, process of turning over what appears to be self-will, expands interdependence and encourages growth of spirituality.

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Domain C

Emotional Awareness and Resilience

Deeper into RMT Domains

- According to Antonio Damasio:

  "Emotions are the complex reactions the body has to certain stimuli. When we are afraid of something, our hearts begin to race, our mouths become dry, our skin turns pale and our muscles contract. This emotional reaction occurs automatically and unconsciously. Feelings occur after we become aware in our brain of such physical changes; only then do we experience the feeling of fear."
- At the two ends of the spectrum, an individual could have difficulty experiencing, knowing or naming their feelings or have difficulty not being swamped by them, constantly thrown off course by feeling states. The best response is a balance in between.
- Domain C teaches individuals to recognize emotions and prevent excessive reactivity to them.
- Additional work in Domain C helps individuals recognize how AddictBrain uses emotions for its own purposes.

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Domain D – Internal Narrative

Deeper into RMT Domains

- Correcting one's internal narrative is a crucial to a happy sobriety.
- This Domain digs deeper into how AddictBrain uses language to hide and instructs patients how to use language to expose it.
- When working assignments in this chapter, patients are encouraged to track their Denial Rating Scale, a simple 8 point scale that tracks disease acceptance.
- Patients complete their life story in this Domain.
- This domain helps patients recognize their "go-to" defense mechanisms and what to do about them:
  - Rationalization
  - Minimization
  - Blaming
  - Going vague
  - Intellectualization
  - Projection
  - Hostility as a defense
  - Dishonesty
  - Denial

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Domain E – Connectedness & Spirituality

Deeper into RMT Domains

- The two frameworks for Domain E:
  - Steps 2 and 3 of 12-Step Recovery are approached through written assignments and discussion in Assignment Group
  - Attachment theory – taught in Skills Group and practiced in Process Group
- Patients with multiple relapses and disturbed attachment may need extensive time in structured treatment to begin repair.
- Specific skills in this Domain address:
  - Finding commonality
  - Being vulnerable to others
  - Validating help from others
  - Accepting criticism
  - Recognizing and acknowledging empathetic connections to others
  - Developing trust
  - Externalizing shame

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Domain F – Relapse Prevention

Deeper into RMT Domains

- Domain F focuses on concrete concepts and behaviors that decrease the probability of addiction relapse.
- Relapse Prevention Techniques (RPT) in this treatment model start with simple behaviors and move on to more complex techniques. Domain F definitions and training are internally cohesive and approachable, yet rich. Patients may do all or part of their work in this module depending on their need and psychological sophistication.
- Training begins with definitions of Trigger, Craving and Relapse.
- Patients are taught to recognize and report subtle cravings. This is practiced in the Daily Reflection.
- Skills include Urge Surfing and Thought Management

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Tracking and Measuring Progress in RecoveryMind Training

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Measuring Recovery Skills

Domain A - Progress Assessment Form
Containment Review - RecoveryMind Training™

Domain A Core Competency	Date: 10/2/2017						Date: 10/20/2017						Date:					
	Patient			Staff			Patient			Staff			Patient			Staff		
	B	I	C	B	I	C	B	I	C	B	I	C	B	I	C	B	I	C
[illegible]																		
Recognizes how AddictBrain altered past thoughts and behaviors.	✓			✓			✓			✓								
Has identified current and potential future ways AddictBrain will sabotage recovery.	✓						✓			✓								
[illegible]																		

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Advantages of Skill-based Treatment

- Treatment is focused on the acquisition of complex skills. This removes the seemingly arbitrary nature of treatment.
- Skill acquisition is measurable.
- Patients and staff use the Progress Assessment Form to align staff and patient expectations.
- Length of stay is determined by acquisition of skills, not arbitrary models from fixed length treatment providers or third-party payers.

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Review: RecoveryMind Training

- The length and intensity of treatment emerges naturalistically based upon attaining of recovery skills rather than a fixed length of stay or managed care edict (often defined by co-morbid medical illness or imminent lethality).
- Replaces AddictBrain thoughts and actions with effective coping skills and 12-Step recovery.
- Ensures that Recovery will emerge.

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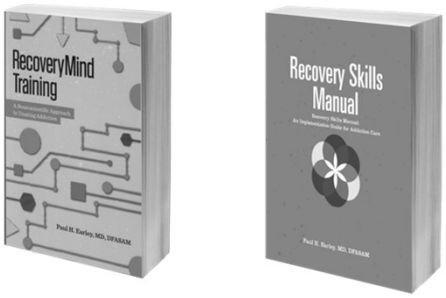
The RecoveryMind Books



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