

## 202: Cognitive Behavior Therapy (CBT) with Dr. Judith Beck

Adam Burt, M.D., Manal Piracha MS, David Puder, M.D.

There are no conflicts of interest for this episode.

In today's episode of the podcast, we interview Dr. Judith Beck, a prominent figure in the field of psychology and author of the highly regarded textbook, [Cognitive Behavior Therapy: Basics and Beyond](#), which is a staple in the academic journey of many students in psychiatry, psychology, counseling, social work, and psychiatric nursing. This book, translated into 20 languages, is a key resource in the U.S. as well as globally.

Dr. Beck serves as the president of the [Beck Institute for Cognitive Behavior Therapy](#), which she co-founded with her late father, Dr. Aaron Beck, who is considered the father of CBT. The Beck Institute is a non-profit organization based in Philadelphia. In addition to her leadership role, she is a Clinical Professor of Psychology in Psychiatry at the University of Pennsylvania, where she educates residents.

## Background

Cognitive behavior therapy (CBT), initially known as cognitive therapy, is psychotherapy based on the cognitive model developed by Dr. Aaron Beck, influenced by Dr. Albert Ellis, phenomenologists, and eastern and western philosophies. There are multiple forms of CBT available, one being the Beckian CBT. Additional forms include ACT, schema therapy, among others. In [Episode 103](#) on acceptance commitment therapy, we started by looking at randomized-controlled trials that compared CBT to ACT and found they had similar outcomes. Here are a few studies we looked at:

- An RCT with 135 caregivers showed no difference in improvement of depression between ACT and CBT ([Losada et al., 2015](#)).
- An RCT with 49 adolescent outpatients (age 12-17) with three arms of CBT, ACT, and wait list showed equivalent improvements in anxiety and depression in both CBT and ACT ([Swain 2015](#)).
- An RCT with 157 children compared ACT, CBT, and a wait-list control for anxiety disorders, and showed equivalent results between ACT and CBT ([Hancock 2018](#)).

## Dr. Aaron Beck: Academic Psychiatrist and Psychoanalyst

Initially a neurology resident in the 1950s, Dr. Beck was required to complete a term in psychiatry due to a post WW2 and Korean war shortage of psychiatrists. He completed his psychiatry training and subsequently trained as a psychoanalyst, finishing his personal analysis in the late 50s. Given his academic background and enthusiasm for psychoanalysis, he aimed

## 202: Cognitive Behavior Therapy (CBT) with Dr. Judith Beck

*Adam Burt, M.D., Manal Piracha MS, David Puder, M.D.*

to empirically validate psychoanalytic theories of depression. His initial work was in depression and overturned the prevailing psychoanalytic theory of retroflected hostility in depression. He was also concerned at the inconsistency in formulation of patients between different analysts for the same condition and became skeptical of psychoanalytic theories. His research led to the development of the cognitive model, which postulates that people's depressed mood was influenced by their automatic thoughts.

### The Influence of Stoic Philosophy

Epictetus, a Stoic philosopher, famously said, "We cannot choose our external circumstances, but we can always choose how we respond to them." This mirrors the CBT principle that, while we might not be able to control every aspect of our environment, we can control our reactions and thoughts about those circumstances.

Developed by Albert Ellis, rational emotive behavior therapy (REBT) (a precursor to CBT), was directly influenced by Stoic philosophy. Ellis often quoted Epictetus: "Men are disturbed not by things, but by the view which they take of them." The Stoic practice of focusing on things within our control, accepting what is beyond our control, and striving for rationality and virtue is reflected in the way Ellis's REBT encourages individuals to challenge and change their irrational beliefs and perceptions.

Aaron Beck's cognitive model for neuroses includes:

- Depression: It's viewed as stemming from negative perceptions about oneself, one's experiences, and the future. This is encapsulated in the cognitive triad, where individuals see themselves in a negative light, expect negative outcomes, and interpret experiences pessimistically.
- Anxiety: Characterized as the fear of a future unpleasant event.
- Phobias: Defined as a specific fear of a bad event occurring in certain situations or circumstances.
- OCD: It involves the fear of a bad event happening unless preventive actions are taken (Kennerley, 2016).

Dr. Judith Beck recounts one of her father's clinical anecdotes, where towards the end of the therapy session, as his patient was free-associating on the couch discussing her sexual behaviors, he noted some distress in telling him the details. Dr. Beck interpreted this as shame associated with her behaviors. When prompted about this, her response surprised him. Instead of communicating feelings of shame regarding her behaviors, she had shame regarding her interpretation of his response, she said, "I thought you were bored." Dr. Beck noticed a similar negative cognition in many of his patients. Rather than see this as part of the overarching transference or countertransference, as discussed in [Episode 170](#), according to Beck this was a cognition, a view she held of herself (that she was boring) that could be deconstructed using certain techniques. Beck views this as one of the experiences that drove him to develop cognitive behavior theory.

## 202: Cognitive Behavior Therapy (CBT) with Dr. Judith Beck

*Adam Burt, M.D., Manal Piracha MS, David Puder, M.D.*

Interpersonal statements that connect the therapist and patient, regardless of modality, are very important to pay attention to, empathize with, and, as Judith Beck discusses in our conversation, thank the patient for sharing. These statements not only increase the level of safety the patient feels in the relationship, but also offer important insights that are helpful in guiding the course of treatment.

## Cognitive Model Background

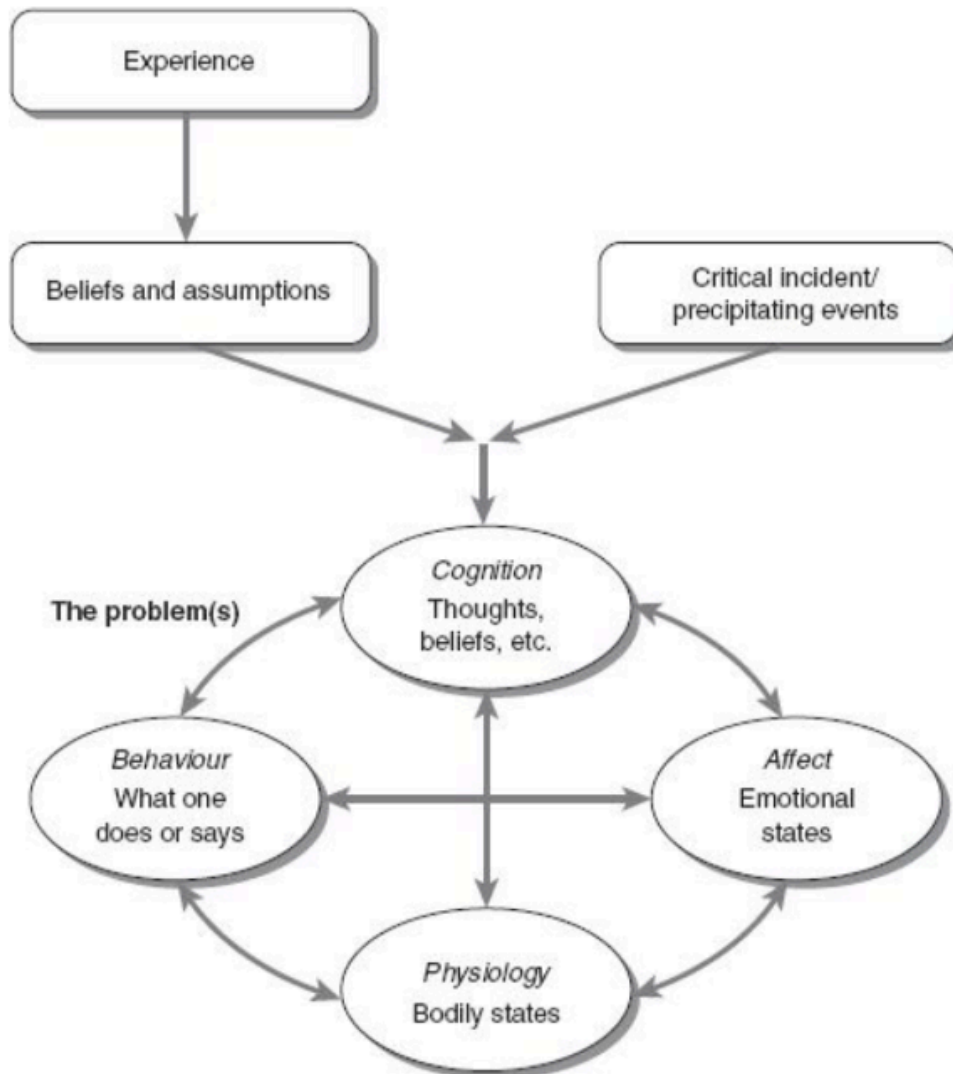
The model of mind in CBT is captured by several principles:

Interactive systems:

- The model of mind in cognitive behavioral therapy (CBT) incorporates an interactive systems framework. This framework understands problems as arising from interactions within five key internal systems of an individual: thoughts (cognitions), emotions (affect), behaviors, physiological responses, and beliefs or perceptions. These internal systems are continuously interacting not only with each other but also with various external factors, including the social, cultural, familial, and economic contexts in which the individual exists. This approach emphasizes the intricate and dynamic interplay between internal psychological processes and external environmental influences in shaping mental health and behavior.

## 202: Cognitive Behavior Therapy (CBT) with Dr. Judith Beck

Adam Burt, M.D., Manal Piracha MS, David Puder, M.D.



### Generic problem development model

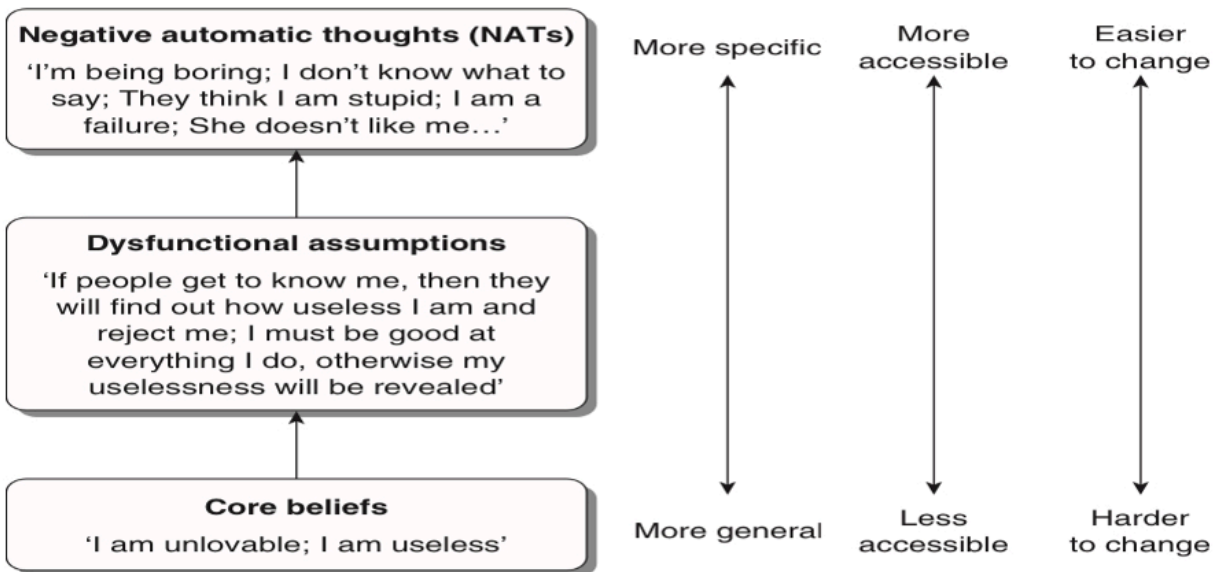
Cognitive principle:

- The cognitive principle of cognitive behavioral therapy (CBT) posits that an individual's emotional, behavioral, and physiological responses to a situation are governed not by the situation itself, but by their perceptions and interpretations of it. This highlights the central role of thought processes in shaping reactions and behaviors (Beck, 2020; Kennerley, 2016).
- Marcus Aurelius, a Stoic philosopher, emphasized thoughts and perceptions in shaping our experiences. In his [Meditations](#), he states, "You have power over your mind, not outside events. Realize this, and you will find strength."

## 202: Cognitive Behavior Therapy (CBT) with Dr. Judith Beck

Adam Burt, M.D., Manal Piracha MS, David Puder, M.D.

### What are CBT levels of cognition?



### What are automatic thoughts?

Automatic thoughts are spontaneous, often subtle, and emotionally-charged appraisals, interpretations, or ideas that are tied to specific situations. They can be negative and unhelpful or positive and helpful. They can emerge without conscious awareness. For example, the thought "I am useless" might arise when someone is upset due to a mishap, appearing as a straightforward truth. However, a fundamental concept in CBT is that, "thoughts are opinions, not facts," indicating that automatic thoughts, like all opinions, may not always be accurate.

Typically, automatic thoughts are discussed as if they were verbal statements such as, "I am useless." However, it is crucial to understand that they can also occur as mental images. For instance, in social phobia a person might not explicitly think, "Others see me as odd," but, rather, conjure up a mental image of themselves appearing flushed, sweating, and awkward.

Because automatic thoughts instantly affect our emotional state and are readily identifiable, they are often a primary focus early in early therapy sessions.

# 202: Cognitive Behavior Therapy (CBT) with Dr. Judith Beck

*Adam Burt, M.D., Manal Piracha MS, David Puder, M.D.*

## What are dysfunctional assumptions?

Assumptions, or intermediate beliefs, can be either maladaptive or adaptive. These beliefs act as personal rules for living and are shaped by core beliefs. They often take the form of conditional statements such as, "If... then..." or "should/must...otherwise." These assumptions are more specific than core beliefs but are broader and less precise than automatic thoughts.

For example, a common assumption might be that if one pleases others, they will be accepted, but if they assert their own needs, they will face rejection. These assumptions are not as immediately apparent as automatic thoughts and might not be easily expressed in words. Often, they need to be deduced from a person's actions or from recurring patterns in their automatic thoughts (Beck, 2020; Kennerley, 2016).

## What are core beliefs?

Core beliefs, also known as schemas, are deeply ingrained beliefs about oneself, the world, and others. These beliefs can be either adaptive and helpful or maladaptive and unhelpful. They are somewhat similar to personality traits in their nature. Typically, core beliefs operate unconsciously, influencing automatic thoughts and assumptions.

These beliefs are often expressed as broad, absolute statements, such as, "I am worthless," "I am helpless," or "I am unlovable." Unlike automatic thoughts, core beliefs are relatively stable over time and are viewed by the individual as fundamental truths applicable in various situations. Usually, these beliefs are formed early in life due to childhood experiences, but they can also develop or change later due to mental illness or trauma.

Core beliefs are not usually the direct focus of short-term therapy for specific issues. However, in the treatment of chronic problems like personality disorders or complex post-traumatic stress disorder, these beliefs are key targets in schema therapy. To understand a person's core beliefs, one often needs to observe their characteristic assumptions, thoughts, and behaviors in different situations, as these beliefs may not be readily verbalized (Beck, 2020).

## Adaptive Core Beliefs:

- These are positive beliefs about oneself, others, and the world.
- Examples include beliefs like "I am generally effective, likable, lovable, and worthwhile."
- Beliefs about others tend to be optimistic, viewing them as mostly neutral or well-intentioned, though acknowledging some may be hurtful.
- The perception of the world is of it being somewhat predictable and primarily neutral or benign, while recognizing that some aspects may be unsafe.

# 202: Cognitive Behavior Therapy (CBT) with Dr. Judith Beck

*Adam Burt, M.D., Manal Piracha MS, David Puder, M.D.*

## Maladaptive Core Beliefs:

- These are negative beliefs that can be detrimental to one's mental health and well-being.
- Common maladaptive beliefs about oneself include, "I'm unlovable," "I'm helpless," and "I'm worthless."
- When it comes to others, these beliefs are often pessimistic, viewing people as potentially hurtful, dangerous, and untrustworthy.
- Such beliefs are typically ingrained and can influence one's interpretation of events and interactions, often leading to a distorted view of reality (Beck, 2020).

## Other CBT Principles:

### Behavior Principle:

- This principle highlights the significant impact of our actions and speech on our thoughts and emotions.
- Engaging in certain behaviors or deliberately avoiding them can influence our mental state.
- Coping strategies, which can be adaptive (helpful) or maladaptive (harmful), also play a role in shaping our thoughts, emotions, and physiological responses.

### Continuum Principle:

- Mental health issues are seen as extensions of normal psychological processes, not as fundamentally different states.
- This perspective suggests that unhealthy mental states are more intense versions of normal mental states.
- This principle aligns with the trend towards dimensional diagnoses in mental health, which view mental health issues as existing on a spectrum.

### Here and Now Principle:

- In CBT, the focus is often on addressing current issues and processes rather than dwelling on the past.
- However, addressing past issues is also a part of CBT, approached in a similar manner to dealing with present concerns.
- This principle acknowledges that while past experiences are influential, the current state is where therapy can be most effective.

# 202: Cognitive Behavior Therapy (CBT) with Dr. Judith Beck

*Adam Burt, M.D., Manal Piracha MS, David Puder, M.D.*

## Empiric Principle:

- Emphasizes the importance of grounding both theories and therapeutic practices in scientific evidence rather than anecdote.
- This approach is ethically justified and aligns with the principle of distributive justice.
- It is foundational to CBT, as the therapy's underlying theory is research-based rather than purely theoretical.

## Interpersonal Principle:

- CBT is a collaborative process, taking place within the context of a therapeutic relationship or alliance.
- Therapists are mindful of their own unspoken thoughts and emotions towards the patient, as well as the patient's responses.
- This interaction is similar to the concepts of transference and countertransference, where emotions and thoughts are projected onto each other in the therapeutic setting (Beck, 2020; Kennerley, 2016).

## Further Reading on CBT Evidence and Neuroscience

### Efficacy Research

Cognitive behavior therapy is one of the most well-researched treatments in medicine, and certainly the most well-researched psychotherapy modality. There are multiple systematic reviews demonstrating its effectiveness both short and long term, in many diagnoses, with moderate to large effect sizes.

For example, a very large systematic review and meta-analysis on the effectiveness of CBT for depression, including 409 trials with 52,702 patients, found the effect size of CBT compared to control conditions was medium to large ( $g=0.79$ ; 95% CI: 0.70-0.89) but when compared to other psychotherapies the difference was very small ( $g =0.06$ , 95% CI 0-0.12) (Cuijpers et al., 2023).

### Neuroscience Research

Neuroscience research into mechanisms of change in CBT have mostly been conducted in anxiety and depressive disorders, including functional magnetic resonance imaging (fMRI) studies and studies of inflammatory cytokines, oxidative stress and telomere biology. Numerous



## 202: Cognitive Behavior Therapy (CBT) with Dr. Judith Beck

Adam Burt, M.D., Manal Piracha MS, David Puder, M.D.

studies suggest the capacity for emotional regulation and modulation of autonomic arousal is enhanced by CBT induced top down control due to neuroplasticity. Studies into inflammation have found CBT reduces expression of pro-inflammatory cytokines. A study conducted by [Chen et al.](#) studied a cohort of hemodialysis patients with sleep disturbance. Thirty-seven received tri-weekly cognitive-behavioral therapy lasting 6 weeks and the remaining 35, who received [sleep hygiene](#) education, served as controls. The post-trial secondary outcomes of high sensitive c-reactive protein, IL-18, and oxidized low density lipoprotein all significantly declined with CBT compared to controls.

Table 4. Changes in plasma levels of secondary outcomes during the 6-week trial

	CBT group (N=37)	Control group (N=35)	P-value
Δhs-CRP (%)	-27.5 (-52.1, -3.13)	3.9 (-10.4, 13.7)	0.001
ΔIL-1β (%)	-11.3 (-27.9, 1.2)	0.1 (-7.2, 10.5)	0.078
ΔIL-18 (%)	-8.4 (-26.5, 4.6)	14.1 (-1.5, 25.5)	<0.001
ΔoxLDL (%)	-5.1 (-13.3, 0.6)	26.9 (3.8, 30.9)	<0.001

Abbreviations: CBT, cognitive-behavioral therapy; hs-CRP, high-sensitive C-reactive protein; IL-1β, [interleukin 1 beta](#); IL-18, interleukin 18; oxLDL, oxidized low-density lipoprotein.

The difference (Δ) was defined as  $100\% \times (\text{post-intervention data} - \text{pre-intervention data}) / \text{pre-intervention data}$ .

Interestingly, the evidence suggests the mechanism of change in CBT (and other therapies) is similar to those induced by medications (Mansonn et al., 2021). [Furmark et al.](#) recognized the neural regions related to treatment with citalopram and CBT in social phobia and how they converge to the amygdala, hippocampus, and adjacent cortical areas, and possibly mean a common way in the successful treatment of social anxiety.

In [Paquette et al.](#), fMRI was used to assess neural changes in the brain from cognitive behavioral therapy. CBT was conducted on patients with a spider phobia (n=12). The phobic patients were scanned before starting CBT and it was found that, when exposed to the phobogenic stimuli, there was an increased activation of the right dorsolateral prefrontal cortex (Brodmann area-BA 10), the parahippocampal gyrus, and the visual associative cortical areas, bilaterally. After completion of CBT, the scans found no significant activation in the dorsolateral prefrontal cortex (BA 10) or the parahippocampal gyrus. These findings suggest that an approach like CBT has the potential to modify the dysfunctional neural circuitry associated with anxiety disorders.

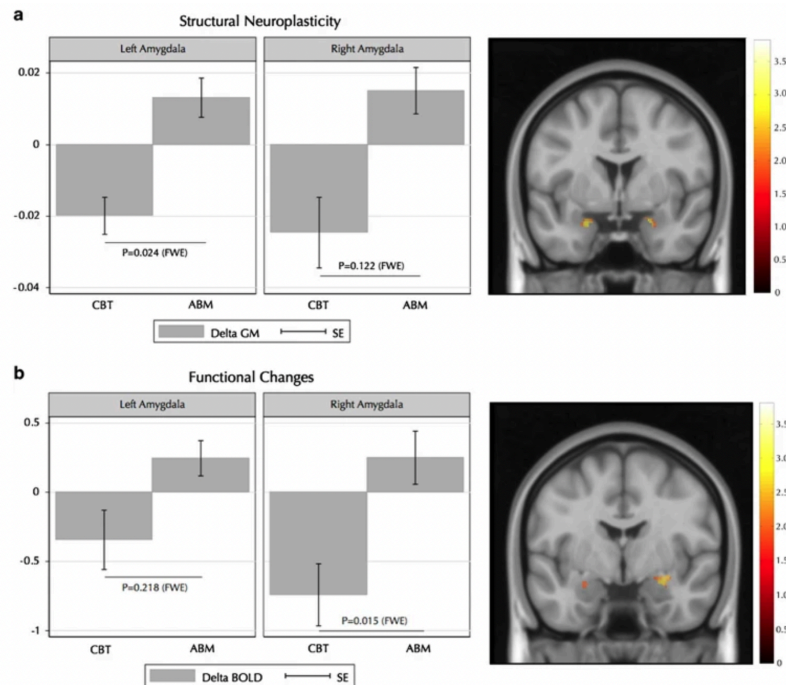
A study by [Mansson et al.](#) examined CBT-related changes in the brain by evaluating the relationship between structural neuroplasticity (gray matter volume) and functional changes (blood oxygen level dependent) in patients with social anxiety disorder. The study had 26 participants with a diagnosis of SAD and 26 healthy controls. More participants responded

## 202: Cognitive Behavior Therapy (CBT) with Dr. Judith Beck

Adam Burt, M.D., Manal Piracha MS, David Puder, M.D.

positively to the CBT (61%, 8/13) than to the attention bias modification control treatment (23%, 3/13;  $\chi^2=3.94$ ,  $P=0.047$ ). The study found that CBT-induced reductions of the gray matter volumes of the bilateral amygdala and the insula were positively associated with decreased levels of anticipatory speech anxiety (left amygdala).

Time  $\times$  treatment interactions indicated that left amygdala gray matter volume and right amygdala blood-oxygen-level-dependent response decreased significantly more with CBT compared with the attention bias modification control treatment.



Nine patients with obsessive-compulsive disorder were studied with PET scans before and after 10 weeks of structured exposure and response prevention behavioral and cognitive treatment. Behavior therapy responders had significant ( $P < .05$ ) bilateral decreases in caudate glucose metabolic rates that were greater than those seen in poor responders to treatment. Before treatment, there were significant correlations of brain activity between the orbital gyri and the head of the caudate nucleus and the orbital gyri and the thalamus on the right. These correlations decreased significantly after effective treatment ([Shwartz et al., 1996](#)).

Marwood and colleagues conducted a systematic review and meta-analyses of brain activity changes accompanying psychological therapy, including 22 longitudinal studies (i.e., scanned before and after therapy) with 352 participants. Studies included 5 panic disorder, 4 PTSD, 5 SAD, 3 unipolar depression, 2 specific phobia, 2 OCD, and 5 GAD studies. The illness severity was typically moderate, which is expected in a psychotherapy study. The psychotherapy modality in 13 of the studies was CBT. Other modalities included psychodynamic therapy,

# 202: Cognitive Behavior Therapy (CBT) with Dr. Judith Beck

Adam Burt, M.D., Manal Piracha MS, David Puder, M.D.

EMDR, eclectic and behavioral therapy. Robust findings of the meta-analyses included decreased activation post v. pretherapy in left anterior cingulate, bilateral inferior frontal gyrus and left insula. The authors assert that their findings mirror findings in similar systematic reviews (Marwood et al., 2018).

Chen and colleagues conducted a randomized-controlled trial of CBT (n=37) v. sleep hygiene education (n=35) for haemodialysis patients with disturbed sleep. Patients in the CBT group received 3 sessions of CBT each week for 6 weeks. There were improvements in anxiety, depression and fatigue scores in the CBT, but not in the control group. There were also significant improvements in inflammatory markers (C-reactive protein, interleukin 1b and 18, and oxidized low density lipoprotein) in the CBT group, but not in the control group. The authors suggest CBT is able to improve sleep and inflammation in patients on haemodialysis (Chen et al., 2011).

**Table 2 | Baseline and post-trial comparisons of treatment groups between all outcome measures**

Measures	CBT group (N=37)			Control group (N=35)			CBT vs control (pre-trial)	CBT vs control (post-trial)
	Baseline	6 Weeks	P-value	Baseline	6 Weeks	P-value	P-value	P-value
<i>Primary outcomes</i>								
PSQI	13.4 (3.5)	9.9 (3.7)	<0.001	12.2 (3.0)	11.6 (3.6)	0.036	0.181	0.04
Sleep duration (hours)	5.0 (1.6)	5.8 (1.5)	<0.001	5.4 (1.4)	5.7 (1.6)	0.068	0.357	0.511
Sleep latency (minutes)	53.0 (30.1)	35.1 (26.1)	<0.001	35.8 (29.0)	35.3 (28.2)	0.957	0.009	0.984
Sleep efficiency (%)	71.3 (18.2)	86.0 (15.9)	<0.001	74.4 (17.7)	78.1 (17.8)	0.11	0.498	0.04
<i>Secondary outcomes</i>								
<i>Inflammatory markers</i>								
hs-CRP (mg/l)	2.4 (1.0, 5.7)	1.6 (0.7, 3.7)	0.002	2.8 (1.0, 5.8)	2.8 (1.2, 6.8)	0.283	0.973	0.114
IL-1 $\beta$ (pg/ml)	1.41 (0.94, 2.5)	1.04 (0.8, 2.96)	0.068	1.34 (0.77, 3.04)	1.35 (0.78, 2.94)	0.763	0.610	0.874
IL-18 (pg/ml)	379.0 (313.5, 435.6)	345.0 (244.3, 422.7)	0.022	369.8 (271.9, 428)	378.1 (299, 478)	0.054	0.527	0.085
oxLDL (Units/l)	42.8 (32.7, 60.9)	40.7 (30.9, 59.5)	0.013	46.7 (40.3, 55.5)	63.1 (49.8, 76.7)	0.001	0.403	<0.001
<i>Other assessments</i>								
FSS	4.7 (1.2)	3.9 (1.5)	<0.001	4.1 (1.0)	4.2 (1.8)	0.928	0.145	0.691
BDI	16.8 (8.8)	13.8 (11.5)	0.102	15.7 (13.2)	16.1 (14.2)	0.625	0.598	0.428
BAI	16.0 (10.2)	13.2 (11.4)	0.045	14.3 (11.0)	16.3 (13.2)	0.131	0.332	0.273

Abbreviations: BAI, Beck Anxiety Inventory; BDI, Beck Depression Inventory; CBT, cognitive-behavioral therapy; FSS, Fatigue Severity Scale; hs-CRP, high-sensitive C-reactive protein; IL-1 $\beta$ , interleukin 1 beta; IL-18, interleukin 18; oxLDL, oxidized low-density lipoprotein; PSQI, Pittsburgh Sleep Quality Index. Data are expressed as mean (s.d.) or median (quartiles).

## Efficacy Systematic Reviews

Listed below are some of the major efficacy systematic reviews for specific conditions treated with CBT:

Carpenter JK, Andrews LA, Witcraft SM, Powers MB, Smits JAJ, Hofmann SG. Cognitive behavioral therapy for anxiety and related disorders: A meta-analysis of randomized placebo-controlled trials. *Depress Anxiety*. 2018 Jun;35(6):502-514. doi: 10.1002/da.22728. Epub 2018 Feb 16. PMID: 29451967; PMCID: PMC5992015.

[https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5992015/#:~:text=Evidence%20for%20the%20efficacy%20of.%2C%20generalized%20anxiety%20disorder%20\(GAD%3B](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5992015/#:~:text=Evidence%20for%20the%20efficacy%20of.%2C%20generalized%20anxiety%20disorder%20(GAD%3B)

## 202: Cognitive Behavior Therapy (CBT) with Dr. Judith Beck

Adam Burt, M.D., Manal Piracha MS, David Puder, M.D.

Cuijpers P, Berking M, Andersson G, Quigley L, Kleiboer A, Dobson KS. A meta-analysis of cognitive-behavioural therapy for adult depression, alone and in comparison with other treatments. *Can J Psychiatry*. 2013 Jul;58(7):376-85. doi: 10.1177/070674371305800702. PMID: 23870719.

<https://pubmed.ncbi.nlm.nih.gov/23870719/>

Cuijpers, P., Miguel, C., Harrer, M., Plessen, C.Y., Ciharova, M., Ebert, D. and Karyotaki, E. (2023), Cognitive behavior therapy vs. control conditions, other psychotherapies, pharmacotherapies and combined treatment for depression: a comprehensive meta-analysis including 409 trials with 52,702 patients. *World Psychiatry*, 22: 105-115.

<https://onlinelibrary.wiley.com/doi/10.1002/wps.21069#:~:text=The%20main%20effect%20size%20indicating,ranged%20from%20-0.45%20to%202.04>

Hofmann SG, Asnaani A, Vonk IJ, Sawyer AT, Fang A. The Efficacy of Cognitive Behavioral Therapy: A Review of Meta-analyses. *Cognit Ther Res*. 2012 Oct 1;36(5):427-440. doi: 10.1007/s10608-012-9476-1. Epub 2012 Jul 31. PMID: 23459093; PMCID: PMC3584580.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3584580/>

Kindred R, Bates GW, McBride NL. Long-term outcomes of cognitive behavioural therapy for social anxiety disorder: A meta-analysis of randomised-controlled trials. *J Anxiety Disord*. 2022 Dec;92:102640. doi: 10.1016/j.janxdis.2022.102640. Epub 2022 Oct 13. PMID: 36265270.

<https://pubmed.ncbi.nlm.nih.gov/36265270/>

Leichsenring F, Leibing E. The effectiveness of psychodynamic therapy and cognitive behavior therapy in the treatment of personality disorders: a meta-analysis. *Am J Psychiatry*. 2003 Jul;160(7):1223-32. doi: 10.1176/appi.ajp.160.7.1223. PMID: 12832233.

<https://pubmed.ncbi.nlm.nih.gov/12832233/>

Lewis C, Roberts NP, Andrew M, Starling E, Bisson JI. Psychological therapies for post-traumatic stress disorder in adults: systematic review and meta-analysis. *Eur J Psychotraumatology*. 2020 Mar 10;11(1):1729633. doi: 10.1080/20008198.2020.1729633. PMID: 32284821; PMCID: PMC7144187.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7144187/>

Linardon J, Wade TD, de la Piedad Garcia X, Brennan L. The efficacy of cognitive-behavioral therapy for eating disorders: A systematic review and meta-analysis. *J Consult Clin Psychol*. 2017 Nov;85(11):1080-1094. doi: 10.1037/ccp0000245. PMID: 29083223.

<https://pubmed.ncbi.nlm.nih.gov/29083223/>

Reid JE, Laws KR, Drummond L, Vismara M, Grancini B, Mpavaenda D, Fineberg NA. Cognitive behavioural therapy with exposure and response prevention in the treatment of obsessive-compulsive disorder: A systematic review and meta-analysis of randomised-controlled trials. *Compr Psychiatry*. 2021 Apr;106:152223. doi:

# 202: Cognitive Behavior Therapy (CBT) with Dr. Judith Beck

Adam Burt, M.D., Manal Piracha MS, David Puder, M.D.

10.1016/j.comppsy.2021.152223. Epub 2021 Feb 2. PMID: 33618297.

<https://pubmed.ncbi.nlm.nih.gov/33618297/>

Ruth von Brachel, Gerrit Hirschfeld, Arleta Berner, Ulrike Willutzki, Tobias Teismann, Jan Christopher Cwik, Julia Velten, Dietmar Schulte, Jürgen Margraf; Long-Term Effectiveness of Cognitive Behavioral Therapy in Routine Outpatient Care: A 5- to 20-Year Follow-Up Study. *Psychother Psychosom* 14 August 2019; 88 (4): 225–235. <https://doi.org/10.1159/000500188>  
<https://karger.com/pps/article-abstract/88/4/225/283174/Long-Term-Effectiveness-of-Cognitive-Behavioral?redirectedFrom=fulltext>

Young Z, Moghaddam N, Tickle A. The Efficacy of Cognitive Behavioral Therapy for Adults With ADHD: A Systematic Review and Meta-Analysis of Randomized Controlled Trials. *J Atten Disord*. 2020 Apr;24(6):875-888. doi: 10.1177/1087054716664413. Epub 2016 Aug 22. PMID: 27554190.

<https://pubmed.ncbi.nlm.nih.gov/27554190/>

## References:

Beck, J. S. (2020). *Cognitive behavior therapy* (3rd ed.). Guilford Press.

Chen HY, Cheng IC, Pan YJ, Chiu YL, Hsu SP, Pai MF, Yang JY, Peng YS, Tsai TJ, Wu KD. Cognitive-behavioral therapy for sleep disturbance decreases inflammatory cytokines and oxidative stress in hemodialysis patients. *Kidney Int*. 2011 Aug;80(4):415-22. doi: 10.1038/ki.2011.151. Epub 2011 Jun 8. PMID: 21654719.

Cuijpers, P., Miguel, C., Harrer, M., Plessen, C.Y., Ciharova, M., Ebert, D. and Karyotaki, E. (2023), Cognitive behavior therapy vs. control conditions, other psychotherapies, pharmacotherapies and combined treatment for depression: a comprehensive meta-analysis including 409 trials with 52,702 patients. *World Psychiatry*, 22: 105-115.  
<https://doi.org/10.1002/wps.21069>

Kennerley, H., Kirk, J., & Westbrook, D. (2016). *An introduction to cognitive behaviour therapy* (3rd ed.). SAGE Publications.

Månsson, K.N.T., Lueken, U. & Frick, A. Enriching CBT by Neuroscience: Novel Avenues to Achieve Personalized Treatments. *J Cogn Ther* 14, 182–195 (2021).  
<https://doi.org/10.1007/s41811-020-00089-0>

Marwood, L., Wise, T., Perkins, A. M., & Cleare, A. J. (2018). Meta-analyses of the neural mechanisms and predictors of response to psychotherapy in depression and anxiety. *Neuroscience and Biobehavioral Reviews*, 95, 61–72.