

A Clinician's Guide to Stimulus Control: Part I & II Kelly G. Wilson, Ph.D. CE Credit Course. Kelly Wilson takes you through the basics of behavioral theory to.

This article has been cited by other articles in PMC. Abstract Insomnia is a general clinical term that refers to a difficulty in initiating or maintaining sleep. Insomnia is widely prevalent in the general population, especially in the elderly and in those with medical and psychiatric disorders. Hypnotic drug treatments of insomnia are effective but are associated with potential disadvantages. This article presents an overview of behavioral interventions for insomnia. Behavioral interventions for insomnia include relaxation training, stimulus control therapy, sleep restriction therapy, sleep hygiene, paradoxical intention therapy, cognitive restructuring, and other approaches. These are briefly explained. Research indicates that behavioral interventions are efficacious, effective, and likely cost-effective treatments for insomnia that yield reliable, robust, and long-term benefits in adults of all ages. Detailed guidance is provided for the practical management of patients with insomnia. Insomnia is a general clinical term that refers to the difficulty in initiating or maintaining sleep. It may present as an independent problem primary insomnia or as part of a coexisting medical or psychiatric condition secondary insomnia. According to ICD,[1] nonorganic insomnia F The diagnosis primary insomnia Somatic hyperarousal is characterized by peripheral nervous system activity which is commonly marked by increased muscle tension, rapid heart rate, sweating, and related symptoms. However, the etiology of insomnia remains under investigation and is still not fully understood. Two types of treatment for insomnia have received adequate empirical support: Application of behavioral therapeutic approaches in the treatment of insomnia began with interventions such as systematic desensitization,[12] relaxation,[13] hypnosis,[14] biofeedback,[15] and paradoxical intention[16] which targeted hyperarousal associated with insomnia. During the s, stimulus control therapy for insomnia was introduced. Progressive muscle relaxation PMR , autogenic training, and biofeedback are aimed at reducing somatic arousal e. Biofeedback is a form of relaxation that provides sensory feedback visual or auditory, either mechanically or with computers and amplifiers to help patients learn how to control physiological parameters such as galvanic skin response or muscle tension in order to reduce somatic arousal. Attention-focusing procedures such as imagery training or meditation seek to lower pre-sleep cognitive arousal e. Relaxation therapy is useful for both sleep onset and sleep maintenance insomnia. Regardless of the specific relaxation strategy employed, treatment typically involves conducting specific treatment exercises, teaching relaxation skills, and regular practice with a trained professional over multiple treatment sessions. Most practitioners select the optimal relaxation method based upon which technique is easiest for the patient to learn, and most consistent with how the patient manifests arousal. Some patients, especially those with a history of panic disorder or performance anxiety, might experience a paradoxical response to relaxation techniques. If this occurs with one form of relaxation technique, other suitable techniques may be considered. A detailed discussion of the subject was provided by Perlis et al. This set of instructions is designed to help the patient with insomnia to establish a consistent sleep-wake rhythm, strengthen the bed and bedroom as cues for sleep, and weaken them as cues for activities that might interfere with sleep. The stimulus control instructions, as described by Bootzin et al. Stimulus control therapy originated from an operant learning analysis in which falling asleep is conceptualized as an instrumental act intended to produce reinforcement i. Stimuli associated with sleep become discriminative stimuli for the occurrence of reinforcement. Difficulty in falling asleep, or in returning to sleep after awakening, may be due to inadequate stimulus control. The stimulus control instructions decrease the bed and bedroom as cues for arousal and re-establish the bed and bedroom as strong cues for sleep. They additionally promote a more regular circadian sleep-wake cycle. Instead, patients should rise from bed if they think that minutes has passed, without sleep, after retiring. One advantage of this instruction is that patients learn to better identify what signs e. This increasing sleepiness is known as the homeostatic sleep drive. It is a behavioral technique which is essentially a systematic, controlled, partial form of sleep deprivation designed to consolidate sleep rapidly and then gradually increase the scheduled time

allotted for sleep when adequate sleep efficiency has been achieved. Sleep opportunity is never restricted to less than 5 h because, otherwise, the patient may suffer excessive daytime drowsiness. The consistent bedtime and wake time required by this procedure helps re-entrain and strengthen circadian rhythms which are dysregulated with the irregular sleep schedules common to people with insomnia. Sleep restriction therapy is generally combined with stimulus control therapy or other forms of therapy. From a classical conditioning standpoint, sleep restriction increases the establishing operation of sleepiness, which makes the individual more likely to fall asleep when he goes to bed. Sleep hygiene recommendations have been listed by the National Institute of Health,[34] Perlis and Youngstead,[35] Perlis et al. Although poor sleep hygiene may not be the sole cause of insomnia, it can perpetuate insomnia. Therefore, sleep hygiene education is a necessary addition to other established known beneficial treatments. Paradoxical intention is concerned with increasing the frequency of responses that already occur too often. In other words, paradoxical intention involves prescribing the symptom. This intervention is thought to be suitable for insomnia when there is intense preoccupation about sleep, sleep loss, and its consequences. Paradoxical intention reduces performance anxiety about falling asleep by instructing patients to do the opposite - get into bed and stay awake. When the individual with insomnia engages in the most feared behavior, staying awake, performance anxiety related to trying to fall asleep slowly diminishes. Paradoxical intention may be included as an element of multi-component CBT. These can involve didactic focus, paradoxical intention, distraction and imagery techniques, and cognitive restructuring. There is an attempt to alter dysfunctional attitudes and beliefs about sleep, the consequences of which can be insomnia. Cognitive therapy also addresses catastrophization about the consequences of poor sleep. Patients are helped to reconceptualize the realities of their beliefs; this, in turn, helps decrease the sleep-interfering anxiety that generally increases as bedtime approaches. According to Pigeon,[38] CBT-I is based on a the application of both operant and classical conditioning paradigms in the form of stimulus control instructions[39] ; b the correction of sleep-interfering behaviors through sleep hygiene education[40] ; c the recognition and reduction of hyperarousal precursors of insomnia[41] ; d the improvement of circadian and sleep homeostasis regulation of sleep through sleep scheduling and limited, partial sleep deprivation[42] ; and e the use of cognitive therapy. Whereas these can be delivered separately as monotherapies, multicomponent CBT-I is the preferred approach. If the treatment was effective but had a lower level of empirical validation e. Although pharmacotherapy has been found to be useful for acute insomnia, psychological interventions which mainly include cognitive and behavioral interventions are considered better choices for primary insomnia, chronic insomnia, and insomnia comorbid with other psychological disorders and medical conditions. Hypnotic medications for insomnia carry an advantage in that their benefits are immediate and often ensured. However, hypnotic medications can cause early morning hangover, daytime drowsiness, psychomotor impairment, cognitive impairment, and adverse consequences associated therewith. Hypnotic medications may also be associated with tolerance and dependence. Finally, hypnotics are effective only for as long as they are used, whereas once behavioral interventions are initiated and become a lifestyle practice, their efficacy can be expected to persist. This may be why long-term outcomes of insomnia tend to be better with behavioral interventions than with pharmacological interventions. Most research evidence favors PMR as a treatment for insomnia. This treatment has been found to be more effective than placebo, waitlist, and no-treatment controls. Biofeedback is often paired with some form of relaxation exercise such as PMR. The results are comparable to PMR alone. This makes it difficult to make a case for biofeedback, given that it involves expensive equipment. It is worth noting, however, that sleep restriction has effect sizes equal to that with stimulus control therapy. Paradoxical intention is rarely recommended over more empirically supported methods or methods included in multimodal therapy, but may be useful when patients do not benefit from other methods. The simplicity of sleep hygiene may explain why it is the technique with which most nonspecialists are familiar, and why it is often the only treatment offered to patients; and its failure in monotherapy may explain why clinicians advising sleep hygiene often draw an inappropriate conclusion that behavioral treatments are ineffective for insomnia. The efficacy and effectiveness research provides strong support for CBT-I. Hypnotic drugs and CBT interventions are both effective intervention with the latter associated with several advantages over the former. CBT-I is a

multi-component cognitive-behavioral treatment approach and has received sufficient validation by researchers and clinicians. Available data suggest that CBT-I is an efficacious, and likely cost-effective treatment for insomnia that yields reliable, robust, and long-term benefits among younger as well as older adults. The delivery of formal CBT-I will require professional training on the part of the therapist. However, simple behavioral procedures and techniques can be taught to most patients with insomnia, and these are presented in the Appendix. This should be done wherever possible. It is also important, and helpful, to implement behavioral measures; these are described below. None of the suggestions here is an absolute requirement; however, most are based on good scientific evidence and are, therefore, best adhered to. Importantly, the guidelines need to be tailored to individual contexts; what is appropriate for one patient may not be suitable for another. During the Day Do not nap during the day unless you have good reason to believe that doing so improves the quality of your life. If you do nap during the day, you must recognize that your nighttime sleep requirement will be correspondingly shortened. Some persons function with better efficiency if they take a short afternoon nap and one or more short daytime naps may even be desirable in elderly persons. Moderate physical fatigue can be relaxing; excessive physical fatigue can be counterproductive because it could result in aches and pains that interfere with sleep. Exercise too late in the evening could result in arousal that persists and prevents sleep at night. Before bedtime Taper off your physical activity as you approach your bedtime; otherwise, you will be too alert to sleep. Therefore, you should not exercise vigorously for h before you retire; you should not involve yourself in any moderate exertion for h before you retire. Simple stretching or a little walk around the house can be relaxing. The guiding principle is that you should be made more relaxed and not more alert by whatever you do. If whatever you do makes you feel flushed and breathe heavily, or makes your heart beat faster, it will probably keep you awake for longer. Sexual activity is an exception to the rule because its culmination results in physical and mental relaxation. Do not consume so much fluid during the late evening that you need to rise in the night to empty your bladder. Avoid alcohol intake and smoking in the late evening; alcohol and nicotine are known to result in disturbed sleep. Avoid eating or drinking much during the hour or two prior to retiring; in particular, avoid stimulating foods e. However, do not go to bed hungry. A glass of warm milk or a carbohydrate snack may, however, help you feel drowsy. Do not have a cold bath during the hour or two before retiring; this will make you more alert.

2: Stimulus control - Wikipedia

A Clinician's Guide to Stimulus Control 25 and rewards, a reductionistic process that eventually mechanizes rich and varied human experience, turning us all into robots.

Food and Drug Administration. Management of insomnia disorder in adults: Agency for Healthcare Research and Quality; August Accessed May 15, Practice Pointers Insomnia is a common problem addressed by family physicians and accounts for more than 5. Results included global outcomes, such as improvements in sleep and daytime dysfunction or distress, and sleep outcomes, which assessed specific sleep parameters sleep onset latency, time awake after sleep onset, total sleep time, sleep quality, and sleep efficiency. Duration of insomnia ranged from six months to 19 years, with a duration of more than 10 years in most studies. Psychological interventions included stimulus control, sleep restriction, relaxation techniques, sleep hygiene education, and CBT for insomnia. CBT for insomnia is a combination of cognitive therapy, behavioral interventions i. There were insufficient data to draw conclusions on the effectiveness of specific interventions alone e. Improvements were sustained for at least six months. Among older adults and patients with pain conditions, CBT for insomnia improved global outcomes and some sleep outcomes. There was insufficient evidence to assess adverse effects of psychological treatments. There were 38 randomized controlled trials identified that evaluated pharmacologic therapies, including nonbenzodiazepine hypnotics eszopiclone, zaleplon, zolpidem , an orexin receptor antagonist suvorexant , melatonin agonists prolonged-release melatonin, ramelteon , an antidepressant doxepin , and a benzodiazepine hypnotic temazepam. Most of these studies were of short duration and had a small sample size. Eszopiclone, zolpidem, and suvorexant had the strongest evidence of effectiveness in the general adult population for global and sleep outcomes. Doxepin had the strongest evidence of effectiveness for global and sleep outcomes among adults 55 years and older. Ramelteon did not improve global or sleep outcomes in a clinically meaningful way when compared with placebo. Very few benzodiazepine trials met eligibility criteria primarily because of short treatment duration, and data from the included studies were insufficient to assess sleep outcomes. Adverse events were mixed across studies, with few differences compared with placebo. Psychological and behavioral interventions are considered first-line treatments for insomnia. Food and Drug Administration has approved pharmacologic therapy for short-term use four to five weeks and suggests that medications not be used for extended periods. If insomnia does not improve after seven to 10 days of pharmacotherapy, the patient should be further evaluated. The authors of this manuscript are responsible for its content. Read the full article. Get immediate access, anytime, anywhere. Choose a single article, issue, or full-access subscription. Earn up to 6 CME credits per issue.

3: Behavioral interventions for insomnia: Theory and practice

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Characteristics[edit] The controlling effects of stimuli are seen in quite diverse situations and in many aspects of behavior. For example, a stimulus presented at one time may control responses emitted immediately or at a later time; two stimuli may control the same behavior; a single stimulus may trigger behavior A at one time and behavior B at another; a stimulus may control behavior only in the presence of another stimulus, and so on. These sorts of control are brought about by a variety of methods and they play a large role in systematic accounts of behavioral processes. The behavior occurs immediately when the discriminative stimulus is given. The behavior never occurs in the absence of the stimulus. The behavior never occurs in response to some other stimulus. No other behavior occurs in response to this stimulus. Over a series of trials the pecking response becomes more probable in the presence of the light and less probable in its absence, and the light is said to become a discriminative stimulus or SD. For example, a green light might be associated with a VR 10 schedule and a red light associated with a FI sec schedule, in which case the green light will control a higher rate of response than the red light. Generalization[edit] After a discriminative stimulus is established, similar stimuli are found to evoke the controlled response. This is called stimulus generalization. As the stimulus becomes less and less similar to the original discriminative stimulus, response strength declines; measurements of the response thus describe a generalization gradient. An experiment by Hanson [7] provides an early, influential example of the many experiments that have explored the generalization phenomenon. Reinforcement was then stopped, and a series of different wavelength lights was presented one at a time. The data were displayed as a generalization gradient: The birds were not reinforced when they saw a wavelength more toward the red end of the spectrum. The birds were then tested as before, with a range of unreinforced wavelengths. This procedure yielded sharper generalization gradients than did the simple generalization procedure used in the first procedure. That is, the peak of the test gradients shifted away from the SD, such that the birds responded more often to a wavelength they had never seen before than to the reinforced SD. An earlier theory involving inhibitory and excitatory gradients partially explained the results, [8] A more detailed quantitative model of the effect was proposed by Blough These are called "conditional" discrimination tasks because which stimulus is responded to depends or is "conditional" on the sample stimulus. The matching-to-sample procedure has been used to study a very wide range of problems. Of particular note is the "delayed matching to sample" variation, which has often been used to study short-term memory in animals. In this variation, the subject is exposed to the sample stimulus, and then the sample is removed and a time interval, the "delay", elapses before the choice stimuli appear. To make a correct choice the subject has to retain information about the sample across the delay. The length of the delay, the nature of the stimuli, events during the delay, and many other factors have been found to influence performance on this task.

4: Stimulus Control and CBTI | Stanford Health Care

Stimulus control. The discriminative stimulus (SD) is a stimulus in the presence of which the probability of a particular contingent consequence for a behavior or class of behaviors is greater than when it is not present.

5: Control | Sleepwell

The main goal in stimulus control therapy is to reduce the anxiety or conditioned arousal individuals may feel when attempting to go to bed. Specifically, a set of instructions designed to reassociate the bed/bedroom with sleep and to re-establish a consistent sleep schedule are implemented.

6: SAGE Reference - Transfer of Stimulus Control

10/31/ 2 Stimulus Control and Stimulus Generalization are a Continuum Stimulus Control Stimulus Generalization Stimulus Discrimination Training â€¢ Requires one behavior.

7: Stimulus Control for Clinicians | Association for Contextual Behavioral Science

Control works with you to break the connection between being in bed and feeling frustrated. If you are not tired and ready to fall asleep you should not be in your bed. If you are not tired and ready to fall asleep you should not be in your bed.

The Duke of deception Voyage of discovery in the South Sea, and to Behrings Straits Cafe in berlin 13 Fixing I/V line 14 Introduction of NG tube. The expedition to the Pole Routemaster handbook American drawings and watercolors from Amherst College Quantum measurement approach to tunnelling Principles and methods of teaching book Lee Friedlander At Work Flowers from foreign fields Literary annuals and gift books Mixed multi digit multiplication worksheets Nomadic or settled Fifty shades full circle Educating engineers designing for the future of the field Theorizing the present The career of a litigious Athenian. Traditions and recollections The American search for soul 3. National Identities: The Search for Place in Buchi Vistas pocket dictionary language guide. Supplement to A bibliography of the life and teachings of Jiddu Krishnamurti Operation management by jay heizer solution manual No Bottom Line, No Willingness to Budge 104 Nations of rebels Woodcuts wood engravings Bleeders come first Little Phils cavalier destruction of lives and careers The setting of the prologue of Sophocles Antigone John Porter Animal feed science and technology Bmw f30 repair manual Ancient Achievements And Imperial Antiquity Therapeutic drug monitoring of antibiotics Amitava Dasgupta, Catherine A. Hammett-Stabler, and Larry A. B Soul in management Cambridge history of italian literature Protocols for self-assembly and imaging of DNA nanostructures Thomas L. Sobey and Friedrich C. Simmel An Old Mans Summer Esther M. Friesner; Kurdish notables and the Ottoman state 4-The Leaky Cauldron