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Chapter 1 : The connection between physical and mental health - Exercise Right

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Executive Editor, Harvard Health Letter Physical and mental activities are both important for protecting your thinking skills and warding off dementia. But does one trump the other? Can I preserve my thinking skills if I do more of one activity than the other, such as more crossword puzzles or more walking? I posed the question to Dr. As I write in the April issue of the Harvard Health Letter, he said it was a difficult question to answer because few solid studies have addressed it. That may be changing. A study published yesterday in JAMA Internal Medicine tried to tease out whether physical or mental activity was better for brain health. Researchers recruited older adults who felt that their memory or thinking skills had recently gotten worse, and divided them into four groups. All were asked to do an hour of mental activity three times a week and an hour of physical activity three times a week. What differed were the intensities of these activities: The researchers concluded that the amount of activity is more important for stimulating the brain than the type of activity, because all of the participants both exercised and engaged in mental activities each week. One study of people in their seventies published in Neurology showed that those who exercised the most had the least brain shrinkage and fewer white matter brain lesions, which can be signs of dementia. People who engaged in mental activities had more brain shrinkage and white matter brain lesions. In one study, published in Neurology, researchers demonstrated a direct link between the amount of cognitive activity, such as reading the newspaper or playing chess, and the level of cognitive function in the following year. As I wrote in the August Harvard Health Letter, another study found that engaging in meaningful activities such as volunteering or a treasured hobby promotes cognitive health in old age. What you can do Take advantage of the brain protection that both physical and mental activities provide. On the physical side, start or keep moving. A good goal is minutes of moderate intensity exercise a week, but any activity is better than none. On the mental side, Dr. McGinnis suggests doing something you already enjoy. The guiding principle is that the activities require active engagement, not passive engagement such as watching television. Can I walk and play Scrabble at the same time?

Chapter 2 : Nutrition, Physical Activity, and Obesity | Healthy People

Oriental methods of mental and physical fitness: The complete book of meditation, kinestherapy, and martial arts in China, India, and Japan Paperback -

Received Apr 11; Accepted Apr This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits use, distribution and reproduction in other forums, provided the original authors and source are credited and subject to any copyright notices concerning any third-party graphics etc. This article has been cited by other articles in PMC. Introduction The beneficial effects of regular physical activity on health are indisputable in the field of modern medicine. Exercise is often the first step in lifestyle modifications for the prevention and management of chronic diseases. The Centers for Disease Control and Prevention currently recommends 30 min of moderate- to high-intensity exercise for at least 5 days a week for all healthy individuals DHHS, In addition to significantly lowering causes of mortality, regular exercise and physical activity lowers prevalence of chronic disease s. There is a strong evidence to support that 2â€”2. Individuals who exercise regularly exhibit slower rates of age-related memory and cognitive decline in comparison to those who are more sedentary. Adults who engage in regular physical activity experience fewer depressive and anxiety symptoms, thus supporting the notion that exercise offers a protective effect against the development of mental disorders van Minnen et al. The exact etiology and pathophysiology of these conditions is not fully understood. Comprehending the effects of exercise and physical activity on the mechanisms of anxiety disorders might further our knowledge of these psychiatric disorders. The purpose of this article is to highlight the known and emerging mechanisms that may result in the anxiolytic effects of exercise. Physiological Mechanisms Broadly, regular exercise results in physiological changes and adaptations in the human body. Dysregulations in the HPA axis have long been implicated in the manifestations of depressive and anxiety symptoms Landgraf et al. Acute stress leads to alterations in adrenocorticotropic hormone ACTH and excess levels of glucocorticoids. Chronic stress, as seen in PTSD, has been associated with lower concentrations of peripheral cortisol and upregulation of the glucocorticoid receptors resulting in increased central feedback sensitivity. Depending on the experimental paradigm used for chronic stress, some studies have shown decreased plasma ACTH and corticosterone levels while other studies have shown increased corticosterone secretion Irwin et al. In preclinical studies, voluntary exercise alters the releases of corticotrophin-releasing factor CRF from the hypothalamus and ACTH from the anterior pituitary Salmon, ; Droste et al. These findings suggest that exercise induced changes in the HPA axis modulates stress reactivity and anxiety in humans. Monoamine System Abnormalities in monoamine function in the brain have been implicated in the pathophysiology of anxiety spectrum disorders. In animal studies, learned helplessness resulting from chronic electric shock was associated with a reduced release of serotonin in the frontal cortex Miller et al. Learned helplessness is also associated with a depletion of norepinephrine Petty et al. It is postulated that the reductions in serotonergic and noradrenergic levels reflects synthesis not being able to keep up with demand Charney et al. Animal models also provide evidence that regular aerobic exercise increases serotonergic and noradrenergic levels in the brain, similar to the effects of antidepressants Praag, ; Veale, ; Chaouloff, ; Meeusen and De Meirleir, Researchers have observed increased extraneuronal uptake of norepinephrine and increased levels of norepinephrine in the hippocampus and frontal cortex of rodents after treadmill training and wheel running Dunn et al. Increases in serotonin synthesis, metabolism, and release have been noted following exercise Dunn and Dishman, ; Meeusen and De Meirleir, ; Wilson and Marsden, ; Chaouloff, Animal models utilizing chronic voluntary wheel running have also shown small increases in serotonergic neural activity in the dorsal raphe nucleus, an area of brain that is abundant in serotonergic neurons, during uncontrollable stress Greenwood et al. Opioid System Another possible mechanism for the anxiolytic effects of exercise is via mediation by the endogenous opioid system. Endogenous opioids have a role in the regulation of mood and emotional responses Bodnar and Klein, Studies demonstrate that exercise

increases endogenous opioid activity in the central and peripheral nervous system and may induce a euphoric state and reduce pain Harber and Sutton, ; Morgan, ; North et al. When opioid antagonists were administered following regular exercise, the endorphin produced analgesic effects were attenuated, but there were no changes in the mental health benefits suggesting that the exercise-related surge in endorphins may not completely account for mental health benefits in these studies Carr et al. Neurotropic Factors Brain-derived neurotrophic factor BDNF , the most abundant neurotrophin in the brain has been linked to both anxiety and depression. Stress-induced depressive and anxious behaviors are correlated with decreased BDNF levels especially in the hippocampus Duman and Monteggia, Furthermore, infusions of BDNF into the dorsal raphe nucleus have been shown to have an a antidepressant effect Altar, Evidence also suggests that BDNF may be a mediator of the anxiety reducing effects of antidepressant medications Chen et al. Increases in BDNF following physical activity have also been observed. These changes in BDNF increases functioning in the serotonergic system and may promote neuronal growth Altar, Evidence for Neurogenesis New neuronal growth in the adult brain, particularly in the hippocampus, has been implicated in the treatment of psychiatric conditions including depression and anxiety Eisch, Detection and evaluation of hippocampal neurogenesis is an active area of investigation in recent years Eisch, In primate models of chronic stress, the hippocampus has been shown to be highly sensitive to the toxic effects of excessive glucocorticoids, thus impairing the process of neurogenesis Uno et al. Neuroplasticity is further supported by the stress-related changes found in studies of hippocampus function. Animal studies have shown exercise up regulates hippocampal neurogenesis Duman et al. McWilliams and Asmundson found an inverse relationship between anxiety sensitivity and exercise frequency and suggested that this relationship was due to avoidance of the physiological sensations of exercise that may be interpreted as anxiety and panic. A number of research studies have pointed to the effectiveness of short-term aerobic exercise to reduce anxiety sensitivity Broman-Fulks and Storey, ; Smits et al. Exposing someone with high anxiety sensitivity to the physiological symptoms they fear, such as rapid heartbeat, in the context of physical exercise increases their tolerance for such symptoms McWilliams and Asmundson, Repeated exposures through regular aerobic exercise may also facilitate habituation to the feared sensations Beck and Shipherd, Individuals who trust their ability to manage potential threats high self-efficacy are not plagued by thoughts of worry and experience lower levels of anxiety arousal. Based on the theory of self-efficacy, Bandura posited that a treatment will be successful if it is able to rebuild a sense of self-efficacy by supplying experiences of self-mastery. It has been debated that exercise can increase self-efficacy by supplying experiences of successfully coping with the stress of exercising Petruzzello et al. As fitness improves, the individual receives feedback of greater endurance, less pain, greater duration capabilities, etc. As a result, self-efficacy should increase Petruzzello et al. In fact, one study suggested that exercise with an emphasis on increasing self-efficacy, in this case, martial arts, was more effective in reducing state anxiety than exercise such as riding a stationary bike Bodin and Martinsen, In a study examining the relationship between exercise intensity and self-efficacy effects on anxiety reduction in a non-clinical population, researchers found that the influence of self-efficacy on decreased anxiety was exhibited in the moderate intensity exercise group, but not in the light- and high-intensity exercise groups Katula et al. These two studies suggest that exercise providing an optimal level of challenge best utilizes the power of self-efficacy. The results of meta-analyses supporting this hypothesis are mixed. Exercise and cognitively based distraction techniques were shown to have equal effectiveness at reducing state anxiety, however exercise was more effective in reducing trait anxiety Petruzzello et al. In addition, the anxiolytic effects of exercise have been shown to last for a longer period of time than those produced by therapies based on distraction techniques Raglin and Morgan, Conclusion There is strong evidence from animal studies that exercise and regular activity positively impacts the pathophysiological processes of anxiety. Numerous studies and meta-analyses show that exercise is also associated with reduced anxiety in clinical settings. Similar to the heterogenic nature of the anxiety, no single mechanism sufficiently accounts for the anxiolytic nature of exercise. Physical activity positively impacts a number of biological, as well as psychological, mechanisms. The role of exercise

in the enhancement of neurogenesis in humans has drawn significant attention in recent years and its implications for anxiety disorders are an exciting area of investigation. Future studies are needed to further this type of work, as well as studies specifically exploring clinical applications of exercise in anxiety disorders. Conflict of Interest Statement The authors declare that research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest. Textbook of Work Physiology: Physiological Bases of Exercise. Human Kinetics Publishers Bahrke M. Anxiety reduction following exercise and meditation. Repeated exposure to interoceptive cues: Mood and self-efficacy during acute exercise in clinical depression. A randomized, controlled study. Endogenous opiates and behavior: Evaluation of a brief aerobic exercise intervention for high anxiety sensitivity. Anxiety Stress Coping 21, â€" Physical conditioning facilitates the exercise-induced secretion of beta-endorphin and beta-lipotropin in women. Physical exercise and brain monoamines: Effects of acute physical exercise on central serotonergic systems. Neurobiology of Mental Illness. Oxford University Press Chen Z. A meta-analytic review of aerobic fitness and reactivity to psychosocial stressors. Association of beta-endorphin with specific clinical symptoms of depression. Stress and the brain: Physical Activity Fundamental to Preventing Disease. Brain monoamines, exercise, and behavioral stress: Effects of long-term voluntary exercise on the mouse hypothalamic-pituitary-adrenocortical axis. Neurotrophic model for stress-related mood disorders. Regulation of adult neurogenesis by antidepressant treatment. Exercise and the neurobiology of depression. Brain norepinephrine and metabolites after treadmill training and wheel running in rats. The economic burden of anxiety disorders in the s. Release of beta endorphin and met-enkephalin during exercise in normal women: Central norepinephrine and plasma corticosterone following acute and chronic stressors: Cardiorespiratory fitness and laboratory stress: Effects of chronic stress on plasma corticosterone, ACTH and prolactin. Exercise intensity and self-efficacy effects on anxiety reduction in healthy, older adults. Psychiatry 62, â€" [See comment; Erratum appears in Arch. Psychiatry 62 7 ,]. Hyper-reactive hypothalamo-pituitary-adrenocortical axis in rats bred for high anxiety-related behaviour.

Chapter 3 : Using Exercise to Improve Mental Health / Fitness / Exercises

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If you want to be in a better mood and reduce your stress, exercise! For best results, choose fitness activities that get your heart rate up. If you exercise at least several times per week, every week, you will see greater results. Research Findings on Exercise and Mental Health Studies show that a consistent commitment to exercise decreases anxiety, reduces depression, increases self-esteem and improves restful sleep. While exercise cannot be treated as a panacea for a serious mental health condition, it is a helpful adjunct to other mental health treatments. For milder mental health struggles, exercise leads to relief from worry and stress. Researchers have found that the mental health effects of exercise are greater when you choose strenuous, aerobic forms of exercise that elevate your heart rate and increase your blood circulation. This effect sometimes takes a few weeks to be observable. Greater impact from exercise has been seen in people who either suffer from a high degree of anxiety or were not that fit to begin with. Using Exercise to Improve Your Mental Health If you find that you are constantly under stress, feeling anxious or suffering from persistent low self-esteem, consider incorporating a regular exercise regimen into your life. It is not uncommon when feeling low energy to avoid exercise altogether. In this case, you might want to start out slowly. Choose an activity that challenges you just enough but not to the extent to be discouraging. Riding your bike around the block, walking in a scenic spot or hiking through a nearby trail are examples of ways to get started. As your stamina and endurance increase, challenge yourself further. Ride your bike for an extra half a mile, walk faster or hike up a steeper hill. The important thing is to challenge yourself on a cardiovascular level and to do so regularly. Green Exercise and Mental Health You might find that a gym is your preferred spot for exercise. If not, experiment with outdoor activities. Green exercise is any type of physical exercise performed outdoors. It has been observed to be very beneficial for people who are feeling sad or anxious. Natural environments filled with beautiful greenery, colorful flowers, mountains and bodies of water are ideal locations for physical exercise. Nature has an enlivening yet soothing effect on your senses. It helps to calm your nerves and quiet your mind. Choose an outdoor activity that you enjoy, be it cycling, hiking, swimming or running. Green exercise is especially helpful if you consciously focus your attention on the beauty of the scenery all around you as you exercise. On the whole, exercise is an effective strategy to improve mental health. As your body becomes more fit, your self-esteem increases. You will also sleep better. Exercise causes natural physiological changes in your body that work to elevate your mood and melt away the stress.

Chapter 4 : Exercise and Physical Activity in Mental Disorders: Clinical and Experimental Evidence

*Oriental methods of mental and physical fitness: The complete book of meditation, kinestherapy, and martial arts in China, India, and Japan [Pierre Huard] on blog.quintoapp.com *FREE* shipping on qualifying offers.*

Received Mar 21; Accepted Dec 7. This article has been cited by other articles in PMC. Abstract Several epidemiological studies have shown that exercise EX and physical activity PA can prevent or delay the onset of different mental disorders, and have therapeutic benefits when used as sole or adjunct treatment in mental disorders. Despite several decades of clinical evidence with EX interventions, controlled studies are sparse in most disorder groups. Potential mechanisms of action are discussed, as well as implications for psychiatric research and practice. Physical activity PA and exercise EX continue to gain the attention of practitioners and researchers with regard to prevention and treatment of different psychopathological abnormalities. In an adult US population, regular PA is associated with a significantly decreased prevalence of current major depression, panic disorder, agoraphobia, social phobia, and specific phobia [2]. A study from Norway confirmed this negative cross-sectional association between depression and leisure-time PA of any intensity not work-related PA , and pointed out that social factors such as social support, rather than biological markers, play an important role [3]. Prospectively, the overall incidence of mental disorders and co-morbid mental disorders, as well as the incidence of anxiety, somatoform, and dysthymic disorder, decreases by PA [5]. Furthermore, a four-year prospective study revealed that PA decreases the incidence rates of depressive and anxiety disorders in older adults [6]. Finally, ten Have et al. On a neurochemical and physiological level, a number of acute changes occur during and following bouts of EX, and several long-term adaptations are related to regular EX training. For instance, EX has been found to normalize reduced levels of brain-derived neurotrophic factor BDNF and therefore has neuroprotective or even neurotrophic effects [7 - 9]. Animal studies found EX-induced changes in different neurotransmitters such as serotonin and endorphins [10 , 11], which relate to mood, and positive effects of EX on stress reactivity e. Finally, anxiolytic effects of EX mediated by atrial natriuretic peptide have been reported [14]. Physical Comorbidity Patients with mental disorders display a high comorbidity of physical conditions such as respiratory, metabolic, cardio-vascular and neurologic diseases [17 , 18]. Many of the conditions named above are linked to overweight, smoking, and unhealthy lifestyle [19]; therefore lifestyle interventions based on nutrition and EX are promising approaches for reducing physical comorbidity [20]. Furthermore, psychiatric patients who regularly exercised reported higher health-related quality of life in a cross-sectional study [21]. The following search terms were used: The bibliographies of all retrieved articles were searched for additional references. The level of evidence is heterogeneous amongst different mental disorders Table 1. Subjects with high anxiety sensitivity also report lower levels of PA, higher perceived barriers, and lower benefits of PA, compared to subjects with low anxiety sensitivity [23]. Two meta-analyses concluded that acute and chronic interventions result in decreases in state- and trait anxiety and psycho-physiological correlates of anxiety in different clinical and non-clinical samples [24 , 25]. Additionally, a recent study in adults with intellectual disabilities found that an EX intervention decreased trait and state anxiety in this population [26]. Panic disorder One of the first studies compared a jogging and a walking intervention in patients with panic disorder, finding similar symptom reductions in both groups after eight weeks, and negative correlations between fitness increase and anxiety scores [27]. Comparing endurance training with clomipramine and a placebo revealed that both active treatments were significantly different from the placebo after ten weeks, although the effects of clomipramine occurred significantly faster, and dropout rates were higher in the EX group [28]. Another study [29] that compared paroxetine with a placebo, each combined with either relaxation or running respectively, reported significant effects for paroxetine compared to placebo, but mostly no differences between EX and relaxation. However, significant symptom reduction relative to baseline was seen in the EX group as well. In three pilot studies, positive effects of aerobic EX [34 , 35] and moderate walking [36] on PTSD symptom severity and

associated depressive and anxious symptoms in children [35], adolescents [36], and adults [34] have been reported. However, all of these studies had severe methodological limitations such as very small sample sizes, inclusion of participants without a clinical diagnosis of PTSD, and a lack of control groups. More RCTs with sufficient sample sizes are needed to determine positive effects and possible risks or adverse events when using EX as adjunct treatment in this clinical population. Generalized anxiety disorder In a recent RCT, a six-week program of resistance EX or aerobic EX two weekly sessions was applied in sedentary female generalized anxiety disorder patients. Compared to a wait list control, reductions in anxiety-tension and irritability were found in the resistance EX group after six weeks [38], as well as moderately lower worry symptoms in the combined EX groups [39]. Social phobia Only one study targeted EX interventions for social phobia so far, comparing EX to mindfulness-based stress reduction [40]. Both interventions were associated with diminished social anxiety and depression and increased subjective well-being post-intervention and after three months. Patients with social phobia were more likely to benefit from the EX enhancement, compared to patients suffering from other anxiety disorders. Obsessive Compulsive Disorder Preliminary evidence for the beneficial effects of EX on obsessive-compulsive and concurrent anxious and depressive symptoms comes from two pilot studies. In patients stably medicated with selective serotonin-reuptake inhibitors, reductions in self-reported obsessive compulsive disorder OCD symptoms and depression after six weeks of walking intervention and at one-month follow-up were found, as well as temporarily reduced anxiety scores [43]. Combining behavioral therapy or pharmacotherapy with a week moderate aerobic EX program, the second study reported reduced OCD symptom severity at the end of the treatment, and up to 6 months later [44]. After each to minute training session, patients reported significantly lower anxiety, negative mood, and OCD symptoms relative to the beginning of the session [45]. This effect was particularly dominant at the beginning of the week intervention and diminished as baseline levels decreased. However, because of a lack of control groups and very small sample sizes, the above-listed results need to be replicated in larger controlled studies. Affective Disorders Major depression A large number of clinical studies have investigated EX-induced decreases in depressive symptoms, negative affect, and sleep disturbances, and these findings have been summarized in several reviews e. In a recent Cochrane review [47], meta-analyses were conducted of over 30 RCTs that either compared an EX intervention with no treatment waitlist, placebo, no-treatment , or with any other type of intervention psychotherapy, pharmacotherapy, alternative therapies , or EX-augmented treatment versus treatment alone. Overall, a moderate clinical effect was found when EX was compared to no-treatment or a control treatment. Contrasting EX interventions to cognitive therapy six trials or antidepressants three trials , no significant differences in the reduction of depressive symptoms were found at the end of treatment, indicating that EX was as effective as these standard treatments. Considering only studies with adequate allocation concealment, intention-to-treat analysis and blinded outcome assessment, only a small effect in favor of EX was found. Follow-up data from seven trials also indicated a small long-term benefit of EX interventions. Mixed and resistance EX showed larger effect sizes but also larger confidence intervals than aerobic EX. Bipolar disorder Bipolar patients experience faster exhaustion during moderate aerobic EX than healthy controls [50]. Two studies investigated the effects of regular aerobic EX training [51 , 52], indicating that PA interventions both elective and prescribed are feasible for bipolar disorder BD patients, and decrease stress, depressive, and anxious symptoms [53]. All of the cited studies lacked power and adequate experimental control strategies; therefore, further research will need to determine the potential benefits, but also the limitations and risks of PA in this population for detailed suggestions see [53]. Using semi-structured interviews, Wright and colleagues carved out subjective benefits, potential harms, and barriers to EX in BD patients, concluding that EX is perceived to be helpful in managing mood fluctuations on the one hand, but on the other hand to inhere a certain risk of intensifying manic symptoms [54]. Other reviews discussed EX-induced changes in neurotransmission in BD [55], EX as a possible treatment for neurocognitive dysfunction in BD [56], and reductions of allostatic load by EX [9]. Eating Disorders As in BD, the role of PA and EX in eating disorders is ambivalent, displaying positive

aspects such as weight loss in patients with binge eating disorder BED , or prevention of bone mass loss in anorexia nervosa AN , and negative aspects like excessive PA with compulsive features and deteriorating therapy outcomes [57]. Binge eating disorder In BED, the promotion of EX is essential, given that most patients tend not to exercise at all [58]. This observation is in line with findings suggesting that the perceived effects of being active may be more relevant than actual fitness gains [61]. Bulimia nervosa The only study published for bulimia nervosa compared EX to CBT treatment and found that EX was as effective as CBT in reducing the "bulimia" and "body dissatisfaction" subscales of the Eating Disorder Inventory, but surpassed CBT in terms of "drive for thinness" and bulimic behavior up to 18 months after discharge [62]. One additional recent study found neither beneficial nor detrimental effects of a week resistance training program in teenage anorectic patients [64]. Since none of the studies did satisfy RCT criteria lacking randomization [one trial], quasi-experimental design [one trial] or had insufficient sample sizes [four trials] , further research is needed in this patient group. This effect mainly relies on acute relief of cigarette craving, which helps to prevent relapse. In order to successfully support patients, EX programs should begin prior to smoking cessation, have rather high intensities, a minimum duration of about ten weeks, and promote EX as a coping strategy for acute mood-regulation and craving-reduction [65]. Alcohol and drug dependence In contrast, evidence is much weaker for the efficacy of EX in alcohol and drug rehabilitation see [66] for a review. Most published studies have not employed adequate control groups, had sample sizes that were too small, non-generalizable populations like homeless veterans, heavy-drinking college students without clinical diagnosis, or mandatorily treated patients, or no intention-to-treat-analyses to correct for the high number of dropouts. However, there is preliminary evidence for additional benefits of EX in terms of abstinence, concurrent depression, and anxiety symptoms, which is supported by a large number of preclinical studies [67]. Future RTCs with sufficient sample sizes and controlled designs are necessary to confirm or disprove these findings. Besides effects specific for EX, different mechanisms of action structured social events, general lifestyle modifications, a non-substance use-related social environment have been discussed in the literature [15] and should be investigated in the context of SUDs. Another study [69] combined 12 weeks of aerobic and strength training, finding significant improvements in the total Mental Health Inventory score in the EX group compared to standard care, which were correlated with increased functional capacity. One additional quasi-experimental study found significant reductions in positive and negative symptoms after ten weeks of moderate aerobic EX compared to standard therapy [70]. This study not only found EX-induced decreases in positive and negative symptoms, but also increases in hippocampal volumes after three months of aerobic EX [71]. Those increases also were positively correlated with fitness increases [71]. Recently, a couple of studies investigated the effects of yoga on positive and negative symptoms in schizophrenia, and a review of three RCTs [72] concluded that yoga was more effective than EX with regard to symptom reduction. Acutely, 30 minutes of EX or yoga were found to reduce state anxiety and distress [73]. Since improvements in strength and endurance after training were found in cognitively impaired patients as well as healthy controls [75], PA interventions are generally feasible in this population. Mild cognitive impairment Several studies investigated the impact of PA interventions in elderly individuals with mild cognitive impairment MCI , reporting heterogeneous results. A recent review concluded that EX interventions of all types are beneficial to slow down cognitive decline, and that the best effects can be found with moderate intensity EX e. Interventions with different types of PA and a group setting seem to be particularly helpful in this population. In one study, it became evident that partial improvements in memory and attention occurred only in subjects with greater EX adherence [77]. Four studies [81 - 84] found that PA slowed down and partially reversed the decline in performance of activities of daily living and progression of the cognitive symptoms related to dementia, in contrast to an older study, which did not find improvements in functional ability [85]. Potential neurophysiological mechanisms and target transmitter systems of EX interventions in cognitive decline and AD are summarized in a recent review [86]. Generally, studies using equal contact control groups revealed smaller effects than studies comparing PA with no intervention. This leads to the assumption that unspecific

effects such as therapeutic contact, social support, and distraction may drive some of the effects of lower intensity EX in particular, which is in line with epidemiological findings [3]. Cost-efficacy cannot be estimated for any group of disorders yet. Future studies should consider risks and adverse effects, as well as the benefits of EX. The precise description of conditions, standardized interventions, validated assessment strategies, adequate randomization and control conditions, and power estimations are essential to obtain meaningful results and to allow for the calculation of effect sizes in meta-analyses. However, some conclusions can be drawn concerning frame conditions, which can make EX a promising intervention for mental disorders: Social support seems to be crucial for EX adherence and positive effects of EX [3 , 89], as may be time structure, therapeutic contact, and positive reinforcement [15]. Professional supervision and training management should be provided, especially in the beginning, and PA and EX should be integrated into psychotherapy e. Recent studies indicate that training effects and mood improvements can also be achieved using internet- or telecommunication-based support [91 , 92]. Caregivers providing EX should be aware of differential acute effects depending on training history and actual fitness: Besides physical EX, "mindful EX interventions", such as yoga, draw significant attention as adjunct treatment, for example, in depression and anxiety [94], schizophrenia, eating disorders [95], and smoking cessation [96 , 97]. Also, martial arts were found to have favorable acute effects in depressed patients [98]. The dose-response relationship remains unclear for most mental disorders except for MDD and some aspects of anxiety , as well as the most effective type of EX for each disorder group. Costs, efficacy, risks, adverse events, and contraindications of EX interventions need to be specified. Finally, strategies are needed to enhance motivation of patients during the program and after program termination [99]. Footnotes The authors have no conflicts of interest with the material presented in this paper. The size and burden of mental disorders and other disorders of the brain in Europe Association between physical activity and mental disorders among adults in the United States. Physical activity and common mental disorders.

Chapter 5 : Good balance requires mental and physical fitness - Harvard Health

The Paperback of the Oriental Methods of Mental and Physical Fitness: The Complete Book of Meditation, Kinesitherapy and Martial Arts in China, India and.

But exercise is also one of the most effective ways to improve your mental health. Regular exercise can have a profoundly positive impact on depression, anxiety, ADHD, and more. It also relieves stress, improves memory, helps you sleep better, and boosts overall mood. Research indicates that modest amounts of exercise can make a difference. No matter your age or fitness level, you can learn to use exercise as a powerful tool to feel better. What are the mental health benefits of exercise? Exercise is not just about aerobic capacity and muscle size. Sure, exercise can improve your physical health and your physique, trim your waistline, improve your sex life, and even add years to your life. People who exercise regularly tend to do so because it gives them an enormous sense of well-being. They feel more energetic throughout the day, sleep better at night, have sharper memories, and feel more relaxed and positive about themselves and their lives. Exercise and depression Studies show that exercise can treat mild to moderate depression as effectively as antidepressant medicationâ€”but without the side-effects, of course. In addition to relieving depression symptoms, research also shows that maintaining an exercise schedule can prevent you from relapsing. Exercise is a powerful depression fighter for several reasons. Most importantly, it promotes all kinds of changes in the brain, including neural growth, reduced inflammation, and new activity patterns that promote feelings of calm and well-being. It also releases endorphins, powerful chemicals in your brain that energize your spirits and make you feel good. Finally, exercise can also serve as a distraction, allowing you to find some quiet time to break out of the cycle of negative thoughts that feed depression. Exercise and anxiety Exercise is a natural and effective anti-anxiety treatment. It relieves tension and stress, boosts physical and mental energy, and enhances well-being through the release of endorphins. Try to notice the sensation of your feet hitting the ground, for example, or the rhythm of your breathing, or the feeling of the wind on your skin. Your muscles may be tense, especially in your face, neck, and shoulders, leaving you with back or neck pain, or painful headaches. You may feel a tightness in your chest, a pounding pulse, or muscle cramps. You may also experience problems such as insomnia, heartburn, stomachache, diarrhea, or frequent urination. The worry and discomfort of all these physical symptoms can in turn lead to even more stress, creating a vicious cycle between your mind and body. Exercising is an effective way to break this cycle. As well as releasing endorphins in the brain, physical activity helps to relax the muscles and relieve tension in the body. Since the body and mind are so closely linked, when your body feels better so, too, will your mind. Exercise and ADHD Exercising regularly is one of the easiest and most effective ways to reduce the symptoms of ADHD and improve concentration, motivation, memory, and mood. Instead of thinking about other things, pay close attention to the physical sensations in your joints and muscles, even your insides as your body moves. Exercises that involve cross movement and that engage both arms and legsâ€”such as walking especially in sand , running, swimming, weight training, or dancingâ€”are some of your best choices. Outdoor activities like hiking, sailing, mountain biking, rock climbing, whitewater rafting, and skiing downhill and cross-country have also been shown to reduce the symptoms of PTSD. Other mental and emotional benefits of exercise Sharper memory and thinking. The same endorphins that make you feel better also help you concentrate and feel mentally sharp for tasks at hand. Exercise also stimulates the growth of new brain cells and helps prevent age-related decline. Regular activity is an investment in your mind, body, and soul. When it becomes habit, it can foster your sense of self-worth and make you feel strong and powerful. Even short bursts of exercise in the morning or afternoon can help regulate your sleep patterns. If you prefer to exercise at night, relaxing exercises such as yoga or gentle stretching can help promote sleep. Increasing your heart rate several times a week will give you more get-up-and-go. Start off with just a few minutes of exercise a day, and increase your workout as you feel more energized. When faced with mental or emotional challenges in life, exercise can

help you cope in a healthy way, instead of resorting to alcohol, drugs, or other negative behaviors that ultimately only make your symptoms worse. Regular exercise can also help boost your immune system and reduce the impact of stress. Reaping the mental health benefits of exercise is easier than you think Wondering just how active you need to be to get a mental health boost? You can reap all the physical and mental health benefits of exercise with minutes of moderate exercise five times a week. Two minute or even three minute exercise sessions can also work just as well. Even just a few minutes of physical activity are better than none at all. Start with 5- or minute sessions and slowly increase your time. The key is to commit to do some moderate physical activityâ€"however littleâ€"on most days. As exercising becomes habit, you can slowly add extra minutes or try different types of activities. If you keep at it, the benefits of exercise will begin to pay off. Be a weekend warrior A recent study in the UK found that people who squeeze their exercise routines into one or two sessions at the weekend experience almost as many health benefits as those who work out more often. Get moving whenever you can find the timeâ€"your mind and body will thank you! That you breathe a little heavier than normal, but are not out of breath. For example, you should be able to chat with your walking partner, but not easily sing a song. That your body feels warmer as you move, but not overheated or very sweaty. But taking that first step is still easier said than done. Here are some common barriers and what you can do to get past them. But the truth is that physical activity is a powerful energizer. Studies show that regular exercise can dramatically reduce fatigue and increase your energy levels. If you are really feeling tired, promise yourself a 5-minute walk. If you have children, managing childcare while you exercise can be a big hurdle. Just remember that physical activity helps us do everything else better. If you begin thinking of physical activity as a priority, you will soon find ways to fit small amounts in a busy schedule. Exercise helps you get in shape. If you have no experience exercising, start slow with low-impact movement a few minutes each day. Feeling bad about yourself. Are you your own worst critic? No matter what your weight, age or fitness level, there are others like you with the goals of getting fit. Try surrounding yourself with people in your shoes. Take a class with people at a variety of fitness levels. Accomplishing even the smallest fitness goals will help you gain body confidence. Chair Exercises and Fitness Tips Feeling pain. If you have a disability, severe weight problem, arthritis, or any injury or illness that limits your mobility, talk to your healthcare provider about ways to safely exercise. Divide your exercise into shorter, more frequent chunks of time if that helps, or try exercising in water to reduce joint or muscle discomfort. When we feel depressed, anxious, stressed or have other mental or emotional problems, it can be doubly difficult. This is especially true of depression and anxiety, and it can leave you feeling trapped in a catch situation. So, what can you do? Better to set yourself achievable goals and build up from there. Schedule your workout at the time of day when your energy is highest That may be first thing in the morning before work or school, or at lunchtime before the mid-afternoon lull hits, or in longer sessions at the weekend. If depression or anxiety has you feeling tired and unmotivated all day long, try dancing to some music or simply going for a walk. Even a short, minute walk can help clear your mind, improve your mood, and boost your energy level. You may even feel energized enough to exercise more vigorouslyâ€"by walking further, breaking into a run, or adding a bike ride, for example. Any activity that gets you moving counts. That could include throwing a Frisbee with a dog or friend, walking laps of a mall window shopping, or cycling to the grocery store. Activities such as gardening or tackling a home improvement project can be great ways to start moving more when you have a mood disorderâ€"as well as helping you become more active, they can also leave you with a sense of purpose and accomplishment. That may be a quiet corner of your home, a scenic path, or your favorite city park. Reward yourself with a hot bubble bath after a workout, a delicious smoothie, or with an extra episode of your favorite TV show. Make exercise a social activity. Exercising with a friend or loved one, or even your kids will not only make exercising more fun and enjoyable, it can also help to motivate you to stick to a workout routine. Think about physical activity as a lifestyle rather than just a single task to check off. Look at your daily routine and consider ways to sneak in activity here, there, and everywhere. In and around your home. Clean the house, wash the car, tend to the yard and garden, mow the lawn with a push mower, sweep the

sidewalk or patio with a broom. At work and on the go. Bike or walk to an appointment rather than drive, banish all elevators and get to know every staircase possible, briskly walk to the bus stop then get off one stop early, park at the back of the lot and walk into the store or office, take a vigorous walk during your coffee break. Pick fruit at an orchard, boogie to music, go to the beach or take a hike, gently stretch while watching television, organize an office bowling team, take a class in martial arts, dance, or yoga. These tips can help you find activities you enjoy and start to feel better, look better, and get more out of life. Recommended reading Physical Activity and Mental Health â€" Details how being active can help depression and other mental health issues. Royal College of Psychiatrists The Exercise Effect â€" Discusses the mental health benefits of exercise and why it should be used more frequently in mental health treatment. American Psychological Association Exercising to Relax â€" How physical activity and autoregulation exercises can help reduce stress.

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Chapter 6 : Effects of Exercise and Physical Activity on Anxiety

Oriental Methods of Mental and Physical Fitness: The Complete Book of Meditation, Kinestherapy, and Martial Arts in China, India, and Japan by Pierre Huard starting at $ Oriental Methods of Mental and Physical Fitness: The Complete Book of Meditation, Kinestherapy, and Martial Arts in China, India, and Japan has 2 available editions to.

You might try the following approaches to increase your mental fitness. Stop multitasking You may think that multitasking enables you to get more things done at once, but it actually creates more problems than it solves. Focusing on one task at a time will improve your concentration and help you to be more productive. Be positive with yourself Positive affirmation is one avenue to increased mental proficiency. Affirmation, or talking to yourself in a positive way, involves strengthening neural pathways to bring your self-confidence, well-being, and satisfaction to a higher level. To start, make a list of your good qualities. Set goals for what you want to improve and start small to avoid becoming overwhelmed. Try something different New experiences can also set you on the path to mental fitness. You can fit new approaches into your daily life in a variety of ways: Try new ways to accomplish routine tasks. Travel to new places. Take a new way to work or the grocery store. Doing new things in new ways appears to help retain brain cells and connections. It may even produce new brain cells. In essence, breaking out of your routine can help keep your brain stay healthy. Play games Games that test reasoning and other portions of your brain are fun ways to keep your mind sharp. Even fast-paced action video games may boost your ability to learn new tasks, according to a study in the journal Current Biology. The study found tentative evidence that video games may increase your attention span, reaction time, and task-switching ability. In addition to video games, try any game that employs the use of: Beyond the mechanics, reading helps you visualize the subject matter on the pages before you, and imagine what voices sound like in the written dialogue. This can also be a great relaxation technique. Reading is a great activity because it can stoke the imagination and ignite so many different parts of the brain. There are endless genres and types of reading material. Spending a few minutes on it every day can help you feel better and think more clearly. Remember that relaxation and visualization are just as important in a mental workout as the more energetic activities, such as memory exercises or game-playing. Try adding one or two activities at a time to your mental workout, such as:

Chapter 7 : Physical, Mental Exercises Can Improve Brain Health & Memory

Physical fitness gets plenty of attention, and for good reason. A healthy body can prevent conditions such as heart disease and diabetes, and help you maintain independence as you age. Mental.