

towards exercise from a SEPP. This study's findings are important to the growing body of research regarding the best practices to embed long-term commitment to exercise behavior in individuals.

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Having chronic pain and trying to be active: Is resiliency related to differences in adherence-related psychosocial factors and physical activity?

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Adults with chronic pain struggle to participate in physical activity (PA), which is a key non-pharmacological strategy for pain self-management. Identifying individual-level changeable factors that contribute to differences in adherence-related psychosocial variables and PA participation is needed. One such factor may be resiliency, which involves an individual's abilities to adapt well to adversity and sources of stress, including significant health challenges like chronic pain. It may be that more resilient adults with chronic pain report more beneficial levels of adherence-related psychosocial variables and higher PA participation than less resilient individuals. Thus, the study purpose was to investigate differences in adherence-related variables, including pain intensity, depressive symptoms, fatigue, pain acceptance, pain anxiety, self-efficacy to schedule and plan PA, self-efficacy to overcome pain-related barriers, and actual PA among adults with higher and lower resiliency. Participants were 311 adults ($Mage = 38.94 \pm 13.02$ years) who completed an online survey. A between-groups MANCOVA comparing groups with higher ($n = 166$) or lower ($n = 145$) resiliency, after controlling for age and body mass index, was significant ($p < .001$, partial eta-squared = .32). Follow-up analyses revealed that compared to the lower resiliency group, the higher resiliency group reported significantly: (a) higher self-efficacy to schedule and plan PA and to overcome pain barriers, pain acceptance, and PA participation ($p's \leq .01$, partial eta-squared $\geq .02$); and (b) lower pain intensity, depressive symptoms, fatigue, and pain anxiety ($p's \leq .03$, partial eta-squared $\geq .02$). Study findings are the first to illustrate that adults with chronic pain who are more resilient report a pattern of more beneficial adherence-related psychosocial factors and overall PA participation. If findings are supported in future research, then interventions that foster resiliency may help adults adhere to physical activity and better self-manage their chronic pain.

Differences in pain coping cognitions among adults with chronic non-cancer pain who are inactive, insufficiently active, and sufficiently active

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For adults living with chronic pain being active is an effective self-management strategy. Yet, they struggle to meet the public health recommendation of 150+ minutes/week of moderate- vigorous physical activity (MVPA). Not surprisingly, pain is a frequently reported barrier to physical activity. To date, little research has examined whether adults who differ in MVPA levels also differ in modifiable pain coping cognitions. Thus, the study purpose was to investigate whether adults who were sufficiently active (≥ 150 MVPA mins/week), insufficiently active (< 150 MVPA mins/week), or inactive significantly differed in the pain coping cognitions of: (a) psychological flexibility, which involves people's capacity to be present and adapt to demands, like pain, in order to pursue a valued goal; (b) pain anxiety, which is the anticipation of pain from activity participation; and (c) self-efficacy to cope with pain and related barriers, like stiffness, to being active. Participants were 316 adults who completed an

online survey ($Mage = 38.94$; $SD = 13.02$). A between-groups MANCOVA comparing sufficiently active ($n = 122$), insufficiently active ($n = 105$), and inactive ($n = 89$) groups on pain coping cognitions, after controlling for body mass index, was significant, ($p < .001$, partial eta-squared = .09). Follow-up analyses revealed that the activity groups significantly differed on all variables ($p's < .001$, partial eta-squared $\geq .07$ -.14). The inactive group reported the poorest pattern of pain coping cognitions, including significantly higher pain anxiety and lower psychological flexibility and self-efficacy, compared to the two MPVA groups ($p's < .04$). The insufficiently active group reported significantly lower psychological flexibility and self-efficacy compared to the sufficiently active group ($p's < .001$). Findings illustrated an increasingly helpful pattern of pain coping cognitions among more active individuals. Thus, helping adults learn pain coping cognitive skills may be effective in advancing their MVPA levels, resulting in better pain self-management.

Exploring the relationship between aerobic fitness and activation of the locus-coeruleus

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Aerobic fitness has been associated with superior performance on cognitive assessments requiring attentional control; however, the neural mechanisms underlying this relationship have yet to be determined. One such mechanism may be that aerobic fitness serves to modulate the locus-coeruleus norepinephrine system which is involved in regulating alertness and attention. However, at present we have little understanding of the relationship between the physical health attribute of aerobic fitness and activity of the locus-coeruleus brain region. Accordingly, the present investigation examined the association between aerobic fitness and pupillometric assessments of both tonic (i.e., baseline) and phasic (i.e., task-evoked) activation of the locus-coeruleus in response to a flanker task in a sample of college-aged adults ($N = 78$). In the flanker task, participants were asked to attend to a centrally presented stimulus nested among an array of flanking stimuli and to respond based on response mappings (e.g., press the left button if the middle letter is an M, and the right button if it is an N). Inhibitory control demands were modulated by manipulating the congruency of the flanking stimuli and alternating the stimulus-response mappings. Throughout the behavioral flanker task, participants' tonic and phasic pupillary responses were measured using an EyeTribe infrared eye-tracker. Following completion of the cognitive and pupillometric assessment, a VO_2max test was performed to determine individuals' aerobic fitness percentile. Hierarchical regression analysis controlling for demographic factors revealed that greater aerobic fitness was associated with faster reaction time and superior response accuracy ($p's \leq 0.05$). However, no association with aerobic fitness was observed for either tonic pupil size or phasic pupillary reactivity ($p's \geq 0.7$). These findings suggest that although aerobic fitness is associated with superior performance on an attentionally demanding task, this association is not the result of differential activation of the locus-coeruleus.

Exercise types and white matter microstructure in older adults: A diffusion tensor imaging study

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Higher cardiorespiratory fitness (CRF) levels have been consistently related to measures of better brain health, suggesting that engaging in aerobic exercise (e.g. running, walking) might be an effective approach for enhancing white matter (WM) microstructure of brain across an individual's lifespan. Recent studies have also shown that exercise with higher