

Episode 010: Exercise as a Prescription for Depression, Anxiety, Chronic Stress (like Diabetes) and Sensorium

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This PDF is a supplement to the podcast “Psychiatry & Psychotherapy” found on [iTunes](#), [Google Play](#), [Stitcher](#), [Overcast](#), [PlayerFM](#), [PodBean](#), [TuneIn](#), [Podtail](#), [Blubrry](#), [Podfanatic](#)

There are no conflicts of interest for this episode.

The most recent podcast on the Psychiatry & Psychotherapy Podcast is on the benefits of exercise for depression and cognitive function. I cover 17 studies on the benefits of different kinds of exercise, most specifically strength training.

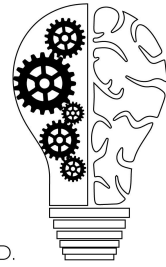
Optimize Exercise

Strength training may be underestimated in terms of improving cognitive function and depression. I wrote a blog about this in the past, and it is a passion of mine. Basically, strength makes people harder to kill.

- Strength also keeps **sensorium** (total body health) up when faced with unplanned medical issues.
- Post-ICU muscle weakness had overall worse **survival** outcomes.
- Handgrip strength predicted functional outcome in hip-fractured women.
- Low muscle mass (sarcopenia) increased the risk of developing delirium in one large multisite study of 588 hospitalized elderly patients.
- Once to twice weekly resistance training over 12 months improved executive function, selective attention, and even conflict resolution, whereas balance and tone training had deteriorated function
- 10 weeks of a supervised progressive resistance training program, performed three times a week, was shown to improve depression, as well as improve bodily pain, vitality, and social functioning. It was also shown to decrease limitations on routine activities from emotional problems.
- In a study looking at high and low intensities of progressive resistance training in adults >60 years old, a decrease in depression symptoms was more significant in the high intensity exercise group. The high intensity group was lifting 3x8 reps at 80% their one rep max, whereas the low intensity group was doing 20% of their one rep max. The depression scale assessed sleep, feelings of guilt, mood,

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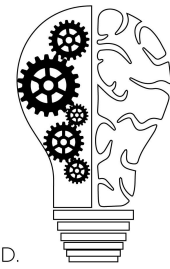
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anxiety and slowness of thought, speech, and action. Strength gain was directly associated with a reduction in depressive symptoms. Those in the high intensity group felt like they had more vitality than those in the other groups. Sleep quality improved significantly in all participants, with the greatest relative change in the high intensity group. Another important finding in this study was that there was an association between a change in depressive symptoms and gain in muscle strength.

- Exercise In General
 - One study that looked at groups of people in a spread of 15 different studies found that a high level of physical activity had a 38% lower cognitive decline and those with low to moderate levels of physical activity had 35% lower cognitive decline than those that did not
 - One very recent article of a follow up of a group of 1,462 women over 44 years showed those with high fitness measured by a cycling machine had 88% lower risk of developing dementia compared to those with medium levels of fitness. Also, those in the high fitness group that did develop dementia, had a delayed onset by 9.5 years compared to those with a low fitness level.
 - Exercise-induced epigenetic changes increased BDNF in mice allowing for increased brain plasticity
 - Exercise increases BDNF, uncoupling protein 2 (important for learning and memory), executive function of cognition (scheduling, planning, monitoring, task coordination), and therefore is neuro-generative, neuroadaptive, and neuroprotective. Further, it counteracts the effects of stress, both future stress (decreases learned helplessness when subjected to overwhelming stress), and past stress.
 - Exercise in the elderly was associated with improved executive function and processing speed
 - Exercise reduces the risk of cancer occurrence, progression, and mortality (Dhabhar 2014)
 - Exercise Duke Study: Exercise and Zoloft have a similar effect
 - Lifestyle changes upregulate and downregulate hundreds of genes.

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- Exercise and Diabetes:
 - One study on strength training of type 2 diabetes patients had those with diabetes only train one leg three times per week for 6 weeks. After clamping off the legs, they found the trained leg had better blood flow, increased leg glucose clearance, increased GLUT4, insulin receptor, protein kinase B-alpha/B, glycogen synthase and GS total activity. Strength training enhances insulin action in skeletal muscles.
 - A study compared strength training with endurance training and found that the only a significant improvement was seen in the strength training group:
 - decline in HbA1c (8.3% to 7.1%),
 - decrease blood glucose (204mg/dL to 147mg/dL)
 - Total cholesterol (207mg/dL to 183mg/dL)
 - LDL (120mg/dL to 106mg/dL)
 - Triglyceride levels (229mg/dL to 150mg/dL)

My exercise recommendations:

I use a model called “Starting Strength” and recommend this [book](#) and watching these videos on technique:

- [Squat](#)
- [Deadlift](#)
- [Bench](#)
- [Press](#)
- [Basic Intro to Barbell Training](#)

Do 3 sets of 5 repetitions each to start out.

Consider getting a coach if you live by one, or an online coach if you want to be a garage warrior like I am!

This is a link to online coaching (use the discount code of “courage”)

<https://startingstrengthonlinecoaching.com/ref/courage/>