

# Exercise as First-Line Therapy in Depression



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**M**ental and physical health intertwine and influence one another in multiple ways. Patients with chronic physical conditions are more likely to suffer from mental illness. Likewise, those with mental illness are more prone to developing a variety of physical ailments.<sup>1</sup> Particularly, depression is known to adversely impact sleep and hormonal balances which directly influences one's overall physical well-being, contributing to higher incidence of ischemic heart disease, stroke, and cancer.<sup>2</sup> Similarly, the chronic burden of cardiovascular disease has been identified as a trigger for depressive episodes in vulnerable individuals.<sup>3</sup> The bi-directional link between mental and physical illness suggests a common biological mechanism which is crucial to fully understand in order to best serve our patients. Despite this, the current treatment paradigm in depression primarily focuses on psychotherapy and pharmacotherapy, without fully addressing the importance of one's physical well-being as a fundamental component of their mental health. Exercise has the unique ability to

simultaneously bolster one's mental and physical health, which highlights its integral role in the treatment of mental illness.<sup>4</sup> This becomes increasingly important during the COVID-19 pandemic where physical activity levels have drastically decreased with depression on the rise.<sup>5,6</sup>

Regular exercise has direct benefits to one's mental health. It has been shown to both prevent and delay the onset of depression and has demonstrated therapeutic benefits when used as the sole or adjunct treatment.<sup>7</sup> Further, the management of depression with selective serotonin reuptake inhibitors (SSRIs) often takes many weeks for a noticeable clinical change to be apparent. This delayed onset leads to a higher burden of disability and increased risk of suicide.<sup>8</sup> It also leads to decreased adherence to medical therapy due to perceived ineffectiveness, with only 19% of patients continuing their SSRIs according to guidelines after 6 months of treatment.<sup>9</sup> In the interim, aerobic exercise has been shown to have measurable reduction

in depression after only 10 days.<sup>10</sup> This earlier onset of symptom improvement is crucial to fill the gap in time left when initiating pharmacotherapy, in order to minimize the burden of disease. The more rapid clinical improvement with combined exercise and pharmacotherapy may also lead to better future compliance of medications, leading to higher rates of sustained remission. Unfortunately, around 30% of patients with depression are not responsive to pharmacotherapy and are deemed to have treatment-resistant depression (TRD).

Oftentimes those with TRD are tapered off of their medical therapy due to the lack of clinical improvement in their depressive symptoms and are lost to follow-up. This leads to a large proportion of individuals with a diagnosed depressive disorder who are not actively receiving any treatment, which has numerous negative implications for the individual and society as a whole.<sup>11</sup> Despite this, exercise has been shown to have significant improvement in the management of TRD. Those with TRD who continued treatment with their SSRIs while simultaneously starting an exercise program had significantly higher remission rates in just 12 weeks.<sup>12</sup> This significant effect is likely due to the notion that patients suffering from depression are more likely to be sedentary. By prescribing an exercise program to these patients, it has been found that over half of patients continue with regular exercise at a one-year follow-up. The patients who continue to exercise have lower depression scores than their sedentary counterparts and also rank exercise to be the most important element in their treatment program.<sup>13</sup> Exercise seems to have a dose-dependent response to improvement in depressive symptoms, however recent research has found benefits from being physically active, even at levels below the public health recommendations.<sup>14</sup> This highlights our duty as clinicians to encourage any increase in exercise to decrease the burden of depression.

Despite the numerous benefits, exercise is not routinely discussed in the setting of mental health, with depression accounting for only 4% of conditions for which exercise was prescribed by physicians.<sup>15,16</sup> A common misconception is that patients, particularly those suffering from depression, are not willing or motivated enough to participate in an exercise regime.<sup>17</sup> However, patients with depression have been shown to have similar adherence rates to those observed in the general population.<sup>18</sup> Occasionally patients do experience some barriers to

initiating a regular exercise program such as lack of time or knowledge, however these barriers are quickly overcome with assistance from their physician.<sup>19</sup> When physicians do recommend exercise to their patient, they often fail to provide a clear executable regime to be followed. As a result of these vague recommendations, patients often do not adopt the suggestions made.<sup>15</sup> Some physicians refuse to discuss exercise entirely, citing lack of knowledge as a significant barrier.<sup>20</sup> This lack of knowledge is often the result of receiving no formal education in prescribing physical activity.<sup>21</sup> Therefore, it is imperative that medical school and residency curricula adapt to include these exercise prescribing practices for more holistic care of patients. Currently, the onus is on the physician to educate themselves in order to prescribe a clear exercise regimen by using a format such as frequency, intensity, time, and type of exercise (FITT).<sup>22</sup> These parameters provide the patient with realistic goals that can be monitored and tailored as necessary. As a result, patients become more involved with their treatment plan which emphasizes an internal locus of control, which is associated with lower rates of depression.<sup>23</sup>

Undoubtedly, pharmacotherapy and psychotherapy are essential for the management of patients suffering from depression. However, exercise has proven itself to be an effective adjunct for the treatment of depression which is not readily presented as an option to patients.<sup>15</sup> Especially during the times of the COVID-19 pandemic where physical activity levels are at an all-time low and the prevalence of depression is increasing, the duty of prescribing exercise is imperative.<sup>5,6</sup> This places the onus on each physician to properly educate themselves on counselling patients with regards to creating a realistic exercise program which can be incorporated as first-line therapy for the management of depression.

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