Key Points

1. Depression is a major problem in the Chiari community
2. Previous research has suggested that exercise can be effective in treating depression, but most of the studies were flawed methodologically
3. This study used a randomized, placebo controlled design to compare supervised exercise, home based exercise and medication to a placebo in treating Major Depressive Disorder
4. Both types of exercise and the medication resulted in significantly higher remission rates after 16 weeks than the placebo
5. There was no significant difference between any of the treatment groups in terms of remission
6. It should be noted that most of the subjects suffered from mild to moderate depression and anyone at risk for suicide was excluded

Definitions

aerobic exercise - activity, such as running or swimming, which works the heart and lungs

Major Depressive Disorder (MDD) - term for depression which is clinically assessed and diagnosed

neurotransmitter - chemicals which act as messengers between nerve cells in the brain

placebo - in clinical research, a medication or treatment which has no effect and is used as a basis for comparison

remission - when disease symptoms are reduced or resolve completely

Zoloft - brand name for a common anti-depressant medication

cerebellar tonsils - portion of the

Exercise Vs. Medication For Treating Depression

November 30, 2007 -- If Chiari has you feeling blue, getting some exercise may be just thing to shake it off. At least that was the major finding of a recent, well-publicized, study on exercise and depression. Published in the September issue of Psychosomatic Medicine, the study (Blumenthal et al.) found exercise to be just as effective as anti-depressant medication in treating Major Depressive Disorder.

Depression is a serious problem in the Chiari community and self-reported rates of feeling depressed and anxious are very high. It is not clear if these are a direct symptom of Chiari, such as increased pressure affecting neurotransmitters in the brain, or secondary to living with pain and disability. Either way, finding effective treatments for depression is an important issue for everyone battling Chiari.

For a while now exercise has been thought to have beneficial effects when it comes to mood disorders, but surprisingly the research to support this is sparse. Most of the work that has been done in this area has suffered from structural and methodological flaws, limiting its usefulness and making it difficult to draw conclusions.

Depression studies need to be particularly rigorous because research has shown that depressed people tend to respond very positively to any type of treatment, even just interaction with the people administering the experiment. This means to really study the effect of a specific treatment requires a carefully controlled trial.

For this study, people were recruited through advertising and selected if they were older than 40, diagnosed with Major Depressive Disorder, and were generally sedentary in their lifestyle. People with psychological problems other than depression - such as bipolar disorder, people who would be unable to exercise, and people at risk for suicide were excluded. With these criteria, 203 participants were selected and randomly assigned to one of four categories: supervised exercise, home based exercise, medication, or placebo. Both supervised, group exercise and home based exercise were used to control for the possible effect that socializing with other people at an exercise class would have on depression.

The study lasted 16 weeks and the participants were evaluated by trained psychologists to assess their depression levels at both the start and end of the study. In addition, fitness levels were assessed using a treadmill test.

Over the course of the 16 weeks, those assigned to the supervised exercise group wend to a structured, group aerobic exercise session 3 times a week. The home based exercise group was given the same instructions as the supervised group, but carried out their program in their own home. The medication group received an appropriate dosage of a common anti-depressant medication (Zoloft) and the placebo group received an inert pill which looked like Zoloft. It should be noted that the people involved in assessing and administering the experiment were not aware of which treatment group people had been assigned to.

As to be expected, a number of people dropped out of the study over the course of the four months, however for those who finished, the ones in an exercise program showed a significant improvement in aerobic capacity. While this was not the main point of the research it was important to establish that the exercise had a real physiological effect on the participants.

To assess the different treatments, the researchers chose to look at remission rates at the end of the 16 week program. Using this outcome measure, the supervised exercise program, the home based exercise program, and the medication group all had significantly higher remission rates than the placebo group (Table 1). Specifically, the supervised and home based exercise groups had remission rates of 45% and 40% respectively. This means that nearly one out of two people who exercised were no longer clinically depressed at the end of the study. The authors also point out that their score on a depression scale at the end of the study indicated it was unlikely they would suffer from further depression.

Interestingly, the difference between the exercise groups and the medication group was not significant, meaning that in this study exercise was just as effective as medication in treating depression. It is also interesting to note that there was no significant difference between the supervised exercise group and home group, meaning that the positive effect is likely from the exercise itself and not the incidental social interaction of a group session.

Finally, it should also be noted that even the placebo group, which did not receive a real treatment, showed a fairly high remission rate of 30%. This means that nearly one third of the participants got better simply from believing they were being treated and taking part in the study. This shows how sensitive depression is to different factors and why it can be difficult to study.

While these results should be widely applicable, most of the participants suffered from only mild to moderate

cerebellum located at the bottom, so named because of their shape

cerebellum - part of the brain located at the bottom of the skull, near the opening to the spinal area; important for muscle control, movement, and balance

cerebrospinal fluid (CSF) - clear liquid in the brain and spinal cord, acts as a shock absorber

Chiari malformation I - condition where the cerebellar tonsils are displaced out of the skull area into the spinal area, causing compression of brain tissue and disruption of CSF flow

decompression surgery - general term used for any of several surgical techniques employed to create more space around a Chiari malformation and to relieve compression

Source

Blumenthal JA, Babyak MA, Doraiswamy PM, Watkins L, Hoffman BM, Barbour KA, Herman S, Craighead WE, Brosse AL, Waugh R, Hinderliter A, Sherwood A. Exercise and pharmacotherapy in the treatment of major depressive disorder. Psychosom Med. 2007 Sep-Oct;69(7):587-96. Epub 2007 Sep 10.

depression and people at risk for suicide were excluded for ethical reasons. Whether exercise can help with severe depression, either by itself or in combination with medication and therapy, is an open question.

Still, it seems clear that people with Chiari need to understand the importance of not becoming sedentary in their lifestyle and actively seek ways to exercise.

Ed Note: It is important for anyone with Chiari to speak with doctor before undertaking an exercise program. This is especially true for people who have not been decompressed surgically. Ray D'Alonzo wrote an article about Chiari & exercise: Chiari & Aerobic Exercise

Table 1
Remission Rates By Treatment Type

Treatment	Remission %
Supervised Exercise	45%
Home Based Exercise	40%
Medication	47%
Placebo	31%

Note: There was a significant difference between the three treatments and the placebo group; the differences between the two exercise groups and the medication group were not significant

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