

# The Positive Effects of Running on Human Health

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## Abstract

Nowadays, running has lost its purpose and benefits as a life saving skill for humans. Nevertheless, running as a sport or a movement has a great impact on human health both physically and mentally. These impacts can help people adjust their mental health state by relieving tension of the mind , improving self-image and creating a better mood. In addition, running also provides people with the opportunity to reduce their body weight, strengthening their immune system.

## Keywords

Running; Types of Running; Human Health; Mental State; Regulation of Breath; Comparative Experiment; Physical Impact; Body Mass; Immune System.

## 1. Introduction

Running, the locomotive movement of the body which allows humans to move fast on foot, has a long history for humans . “The Australopithecus (the early ancestor of humans) first started running when they were being chased by predators”. ( Yash ). In order to save their own life, running becomes an essential part of the australopithecus’ day to day life. Over time, as humans keep developing and involving, people gradually become less dependent on this simple movement of the body. People started training horses and inventing vehicles to help them reduce the amount of exercise in their life. Nevertheless, nowadays, running has lost its function as a surviving skill. Instead, humans used it as a way of improving their personal health.

In 2021, the global situation of human health had reached a low point in history. A large number of people across the world have poor health conditions both physically and mentally. This situation has contributed significantly to the world health burden. Therefore, effective self health management becomes vital for everyone. One way to manage personal health is running. The positive relationship between running and human health has been well established by a substantial amount of research in the past ten years, and running in any form will affect human health both physically and mentally in a positive way.

To understand why running can be helpful for human health, the different types of running are important to know. “ Running included jogging, sprinting, marathon running, orienteering and treadmill running ”.( Oswald et al.) All of these types of running had different effects on human health. For mental health, running will affect mood states, emotional well being and depression. In the meantime, the positive relationship between running and its effect on physical health is also well established through countless research results. Furthermore, running promotes life well being, including the well being with satisfaction of physical health, socialization, community connectedness. (Oswald et al.)

For the past ten years, poor mental health conditions have become one of the main issues around the world. As the technology develops rapidly, people spend more and more time sitting and choosing a sedentary form of life. However, the sedentary ways of human damages people’s mind in many ways. The way people move around has a profound influence on how our minds operate.( Williams ) According to the WHO, the poor quality of life caused by mental illness has

increased from 12.7% - 14% ( males ) and 13.6%-14.45% ( females ) from 2007 to 2017. ( Oswald et al.) An effective solution is much needed.

## 2. Research on the Benefits of Running

On the other hand, when people chose a more active and less sedentary lifestyle. the quality of life will improve significantly. Research has shown that running or jogging at a pace that suits the runner allows minds to relax and wander for a short period of time by reducing activity in the prefrontal regions of the brain. ( Williams ) This short period of time is very helpful for people's mental beings. Another important part of running is the feet. "When the feet hit the ground, the arteries of the feet are compressed. This increases turbulence in the blood, providing it with an extra rush towards the brain of up to 15 per cent." ( Williams ) This extra rush will help increase the grey matter in the hippocampus which is essential for memory processing and spatial awareness.

Furthermore, another important aspect of running is the regulation of breath. Breathing is one of the most crucial aspects of running. When a runner is able to use the oxygen that comes from his breath efficiently, he will have a significant result in his training. When people regulate their breathing, they also control their brainwaves. Human body has the ability to regulate the brainwave and change it to the rate at which the air travels into and out of the nose.( Williams ) The nose is one of the most essential parts for our mind.

"The link comes via sensory neurons at the top of the nose, which fire when air flows past them. Because this air contains information about the outside world, it makes sense that activity in scent-related brain regions begins to synchronize with the breathing rate, allowing information to be processed as it comes in. Recent studies, however, have shown that this synchronization doesn't stop there. It spreads to areas involved in assigning meaning to the information, such as memory, and those involved in planning and decision-making."( Williams ) Thus, by controlling one's breath, people are able to receive information from the outside world and affect the areas related to their mental well being.

In the world of research, comparative experiments and collection of data can provide many important results. In fact, many of the results are able to show the relationship between running and a positive mental state. Many research was conducted to show the difference between runners and non-runners. One main research conducted by Mr.Callen in 1983 shows the important difference in mental well being between runners and non runners. In his research, he uses his data to point out that "Ninety-six percent of subjects noticed mental/emotional benefits from running, but none reported the size of benefits. Benefits included relief of tension (86% of all respondents, n.s.), improved self-image (77%, n.s.), better mood (66%,  $p < 0.05$ ), improved self-confidence (64%, n.s.), relieved depression (56%,  $p < 0.05$ ) and improved happiness (58%, n.s)." ( Callen ) These results are vital since it shows how running has the ability to help patients to reduce their stress and improve their mental well being overall. Besides the research conducted by Callen, another research proves the similar result. In the research from Leedy in 2000, she shows that "Of the non-runners and runners, 16.2% and 4.6%, respectively, had been diagnosed with an anxiety disorder or prescribed an anxiolytic medication. These participants had significantly higher anxiety trait scores than those without a diagnosis:  $F(1,274) = 18.87, p < 0.0001$ ; 27% of non-runners and 11.8% of runners reported a diagnosis of depression or were prescribed an antidepressant. These participants had significantly higher measures of depression traits:  $F(1,274) = 22.46, p < 0.0001$ ." ( Leedy ) Such a difference clearly shows how running can impact one's mental being positively. Therefore, when a patient is in a bad emotional state, running is a great way to solve the problem. Patients can use their energy in running to relieve their stress and reach the emotions they need.

In addition, as the population of runners keeps increasing each year, different types of running become more and more popular around the world. Runners can choose different forms of running such as marathon, cross country, jogging and treadmill running. Therefore, researchers also notice how different kinds of running affects the mental wellbeing of a person. These comparative experiments have different populations, but it all proves that running can change the emotional state of a person and affect their quality of life. They prove that runners in any form reported much less mental health problems compared to the non-runners. For instance, one research has found that long distance running and jogging have a huge effect on the mood state of people. In this research, it states that “marathoners and joggers reported less depression ( $F(2,28) = 7.51, p < 0.003$ ), anger ( $F = 10.11, p < 0.001$ ) and confusion ( $F = 12.41, p < 0.001$ ) and more vigour ( $F = 103.21, p < 0.001$ ) than non-exercisers. At the same time, they also found that Marathoners reported less fatigue ( $F = 10.26, p < 0.001$ ) and tension ( $F = 7.51, p < 0.003$ ) than non-exercisers.” (Wilson et al) Although Marathoners and joggers did not have a significant difference in reported fatigue and tension score ; Nevertheless, marathoners had significantly less problems in depression, anger and confusion but normally became more rigorous than joggers. These results can often apply to the recovery of mental health issues.

As more and more results have shown, doctors around the world start to use running as a form of recovery for their patients. To put in a nutshell, by reducing activity in the prefrontal regions of the brain, pressing the arteries of the feet and regulating the breath, running helps people to relieve themselves from their day to day stress and affects their lifestyle in a positive way. Moreover, by reviewing the comparative research conducted by many scholars around the world, the result shows a huge difference between runners and non-runner for their mental well-being. This further supports the beneficial impact of running on mental health.

To understand how running can impact people’s lives more comprehensively, the physical aspect of this impact is much needed. In the current world, physical inactivity is a leading reason why millions of people pass away each year. Therefore, physical inactivity has become an urgent global health burden. Nevertheless, for 21st century, the social trends suggest that there is a steady decline in the level of physical inactivity. The commitment to solve this problem is much needed in today’s society. (Hespanhol Junior et al.) Among all the physical activity, running is very popular among most countries, since it comes with various benefits. In addition, running has proven that it can impact human health in many different ways. From one experiment, researchers found out that “Even 5-10 minutes running per day and at a slow speed, is associated with markedly reduced risks of death from all causes and cardiovascular disease”. (Lee) People need to focus on the positive impact of running. Thus, the government should motivates healthy but sedentary individuals to begin and continue running for substantial and attainable mortality benefits.” (Lee)

One of the main reasons why running is such a popular sport around the world is that it reduces body mass and cholesterol effectively. People around the world use running as a way to lose their body weight. In addition, this method is supported by many researchers. In one of the researches in the field of sport medicine, they suggest that “ One way to explain such an effective loss of weight is that the reduction found in the body is caused by the reduction in percentage body fat with no significant changes in lean body mass. Prolonged endurance exercise training such as running is known to increase lipids metabolism during exercise. This is probably the most reasonable mechanism explaining the reduction in body fat.” (Hespanhol Junior et al.) By losing their body fat effectively, people will gain a much healthier lifestyle. Since, after the process of losing weight, people are able to reduce their risk of cardiovascular disease and several cancers. Moreover, the habit of running can also help people to build a strong immune system and prevent disease. There are many ways how running can prevent disease from the human body.

One way is that running will flush bacteria out of the lungs and airways. Thus, it will reduce your chance of getting a cold, flu, or other illness. Besides, Exercise causes change in antibodies and white blood cells (WBC). WBCs are the body's immune system cells that fight disease. "These antibodies or WBCs circulate more rapidly, so they could detect illnesses earlier than they might have before." ( URAC ) Along with the previous way of preventing disease, there is another way to prevent disease. "For each running, there is a brief rise in body temperature during and right after exercise may prevent bacteria from growing. This kind of temperature rise may help the body fight infection better". ( URAC ) These ways of building a strong immune system through running could be very beneficial.

Nevertheless, some research argued that running could harm the body in several ways. Many accidents have happened while running ,and people always have a risk of getting hurt while running. In addition, without the proper protection before and after running, people will get hurt easily especially for their knees. It could damage their body and affect their life. "From the previous studies, researchers are able to analyze the data and conclude that the incidence of running injuries in novice runners is about 30 injuries per 1000 h of running exposure , and these injuries can affect up to 30 % of novice runners in 1 year." (Hespanhol Junior et al.) However, the health benefits people gain through the process of running can outweigh the risk of injuries. A large portion of runners have little knowledge of proper protection and stretch. Researchers believe that as people get more and more acquainted with the basic knowledge, the running incidents can be reduced. Therefore, the government should also encourage people to start running and use running as a form of therapy.

Running is a movement that people learn and master through thousands of years. It comes with both benefits and disadvantages. In the past, human have little knowledge about how running could impact their life. Nowadays, as more research is conducted, people understand how important running is for their life. Nonetheless, the health burden is still a huge problem for each country. Therefore, the government should suggest people to start running. Even a small amount of running can be beneficial for their health in many different ways such as improving their mental health, strengthening their physical condition, and reducing the likelihood of infection by the disease.

### 3. Conclusion

In conclusion, running has many important and positive implications for human health. For mental health, running has the benefits of relieving tension , improving self-image, reaching a better mood state and relieving depression. Additionally, running affects humans physically in a positive way by reducing the body weight, building a strong immune system.

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