

# A Study on the Common Causes of Death among the Patients of Multiple Sclerosis and Strategies to Prevent Death

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## Abstract

*This study is based on the common causes of death of patients who have facing issues due to multiple sclerosis. This study focused on different kinds of strategies to prevent the death of patients. Multiple sclerosis is a major disease when the body's immunity system can destroy the nerves. It can be responsible to break down communication between the brain and body. On the other hand, it is also responsible for developing other symptoms such as vision loss, pain, fatigue, and other major problems. Multiple sclerosis is not curable though treatment can only control all problems for a certain period. This study also highlights the patient's problems who had multiple sclerosis and also focuses on the reason for their death. It has been seen that this patient faced different kinds of problems such as movements of muscles, painful sensations, eyes, double vision, and many more. Sometimes these kinds of issues increase the disabilities and reduce activities such as they are not getting energy and strength in their hand and leg and sometimes, they also faced issues in speaking. In order to fix the issues medical authorities and professionals create some intervention plans and strategies that can help to reduce the rate of death and also try to improve their lifestyle and develop their well-being as well. This study used the secondary qualitative method to gather the data and analyze the data to get the desired outcome from research work.*

## Keywords

*Multiple sclerosis, sexual dysfunction, nervous system, walking issues, spinal cord, prevention procedures.*

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## INTRODUCTION

Multiple sclerosis (MS) is a disease where the immune system of the body is destroying the protective covering of nerves. The damage in the nerve is creating a disturbance in the communication between the body and the brain. Different symptoms are developed from multiple sclerosis in a person such as pain, loss of vision, fatigue, pain, and other issues as well. The progression of diseases can be reduced with physiotherapy and proper medication. Slowing the progress of the disease is beneficial for increasing the expectancy of life for a person. There is no cure for multiple sclerosis. The main cause of multiple sclerosis is the completely unknown immune system of the body attacking its tissues that are destroying the fatty substance coating that is protecting the nerve fiber from the brain and spinal cord. The effect of MS is ensuring the death of patients by weakening the controlling muscle of the lungs. This created a major cause of sickness and ensured the death of people due to pulmonary complications. Secondary complications also developed in the persons affected with immobility, chronic urinary tract infection, and issues of swelling and breathing. The interferon beta medication is referred to as the best treatment for MS and these drugs are mostly used to cure patients. Medicines are injected in people that are beneficial for reducing frequencies and relapse severity.

In this study different causes that are commonly developed in death for people with multiple sclerosis are shown. The prevention strategies for the diseases are also described in this study. Death can be prevented with the help of different strategies that are beneficial for lowering the effect of the disease are also described in the study. The issues of death of the patients suffering from multiple sclerosis are described in the study also protentional strategies that are important for gaining development of the disease are also described in the study. The different issues that are developing the disease are shown in the study. This study is going to be beneficial for understanding the issues of death for a person caused due to multiple sclerosis and different death prevention strategies.

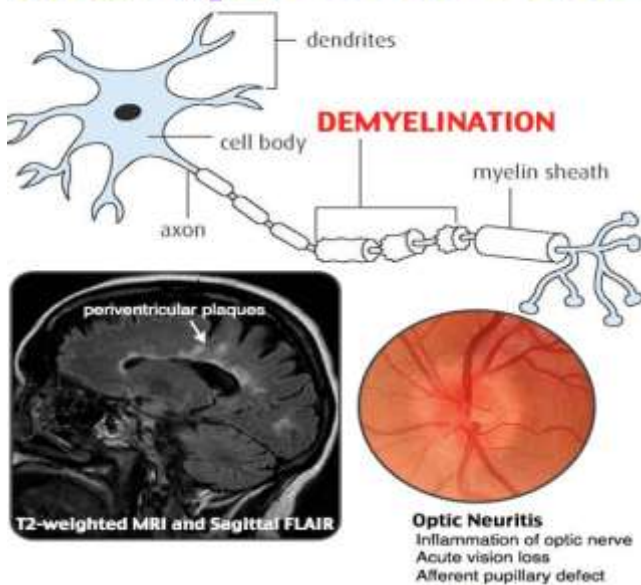
## LITERATURE REVIEW

### Issues of death in patients due to multiple sclerosis and problems faced by persons

The respiratory system of a person is majorly affected by multiple sclerosis which is creating death and sickness for people in most cases. Stiffness in a muscle is increased and impairs the movement of muscles creating different issues that are causing pain and various other problems for a person suffering from the disease. The last stage of MS is leading to trouble with balance, coordination, and posture. Limitation of mobility or developing paralysis condition, blood clotting issues are also developed in a person suffering from multiple

sclerosis [12]. Different serious complications are developed with MS that is leading to disabilities that are resulting in death; in some rare occasions, only MS can be the cause of death for a person. The loss of vision in an eye develops in a person, loss of power in the arms or legs, or develops signs of numbness in the legs of a person. Spasms, fatigue, sexual dysfunction, walking issues, and depression are developed in a person affected with multiple sclerosis. The risk of death is getting higher than normal issues of death in MS disease. 75% of the risk is developing for a person affected by the disease [20].

## Multiple Sclerosis



**Figure 1.** The issues of Multiple Sclerosis  
(Source:12)

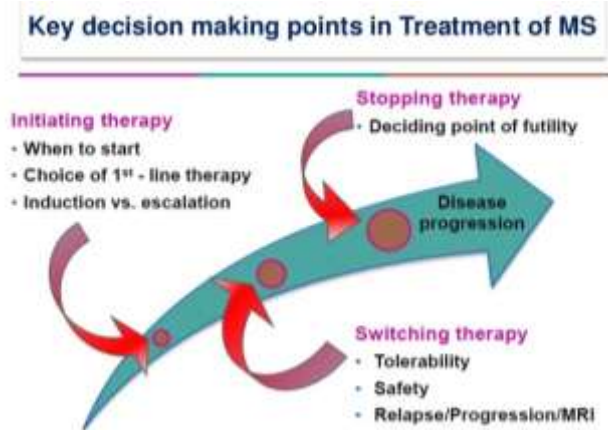
The life expectancy of a person affected with MS is between 5-10 years normally. This is affecting the brain and spinal cord it is also developing some potential symptoms in a person and leads to serious disabilities in some cases. The central nervous system of a person who is seriously affected due to MS is periventricular, subcortical, spinal cord, and infratentorial.

Sudden death in MS is almost rare and can happen due to the demyelinating lesions that are involved with brainstem regions that help to regulate the cardio-respiratory activities of a person. This can lead to the sudden death of a person suffering from MS. Daily life of a person is badly affected due to facing the issues of MS that are creating mobility issues, and disturbance in other functions [19]. The self-esteem of a person is affected due to the effect of multiple sclerosis and social isolation of the person is developed for this issue. Multiple sclerosis is caused within families that developed due to infection with Epstein-Barr virus (EBV). Fulminant multiple sclerosis is the most severe form of multiple sclerosis which is developed through the destruction of the coating which is surrounding and protecting nerve fibers. The white matter of the brain is

damaged by MS which is creating a serious effect on people. It is also affecting the cortical grey matter of the brain which is creating issues in myelinated regions that are closer to the surface of the brain. Depression and anxiety are developed in a person due to the effect of multiple sclerosis that changes the personality of the affected person [18]. Emotional behavior is not able to control the disease. Neuropathic pain is faced by persons affected by MS creating the sensation of burning, squeezing, stabbing, and sharp sensations. Different health issues are developed in a person due to serious issues of MS that are affecting the growth of the person both physically and mentally.

### Mitigation from multiple sclerosis

The procedure of mitigation from multiple sclerosis is easy. Taking rest on an adequate amount helps to reduce the issues of MS. Exercising in a proper and regular way is helping to reduce the effect of multiple sclerosis. Proper eating habits are helping to improve the condition of a person affected with MS. Having a proper and balanced diet is important for getting cured of multiple sclerosis. The reduction of stress levels is also beneficial for getting help from multiple sclerosis. Disease-modifying therapies (DMTs) are beneficial for getting better results from the disease affecting the central nervous system [11]. There are no medicines developed for MS, only procedures are helping to reduce the issues of disease in a person. Although researchers are trying to find out different ways to cure the patients affected by MS.

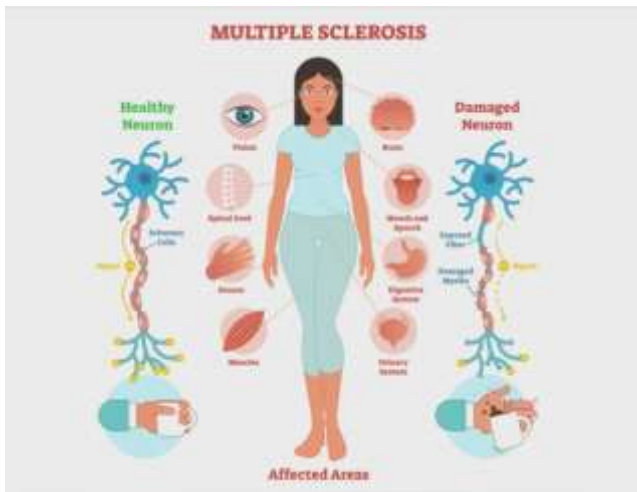


**Figure 2.** Treatment from MS  
(Source: 11)

Neuropsychology evaluations are helping to identify the cognitive strength and weaknesses of a person that is providing care to patients. This treatment is based on the skills of a person. Swallow and speech therapy can be beneficial for patients suffering from MS. A safe swallow can be possible for a person that is helping to improve strength in muscles. Damage is caused to the nerves which are controlling the muscles of the mouth and throat due to MS [13]. This is creating solutions for the issues of speaking problems and swallowing problems developed due to MS.

Weak voice, which is a nosey voice, and long pauses between words are developed in MS and these can be cured with swallow and speech therapies. The issues of dysphagia also can be developed in a person affected with MS and getting the benefits of swallow and speech therapies. These issues are solved or reduced with physical therapy and occupational therapy taking an effective role in managing the issues of MS for a person [17]. The understanding of energy and abilities is ensured by occupational therapy that is helping to reduce burdens from the body of an affected person. Sexual dysfunction can be developed for both men and women suffering from MS as a sexual aerosol can affect the sexual organs of a person. The nerve damage between the spinal cord and brain is affected by sexual dysfunction. Normalizing the effect by providing actual education can be helpful for the patients facing the issues. Counseling is beneficial for reducing stress, anxiety, fear, and other issues that are increasing in a person suffering from sexual dysfunction caused by MS.

smoking, properly maintaining the body weight, and absorbing enough vitamin D for the body is helping to ensure the reduction of negative effects. Activities on a regular basis, minimizing the stress level, and maintaining a proper balance of diet are beneficial for preventing MS in the body [9]. Ocrelizumab is an antibody medication helping to treat relapse-remitting and primary progressive forms of MS. This can be developed as an effective treatment for the prevention of MS from a patient. The reduction of neurological impairment and disability over time can be possible with DMT. Brain inflammation and injuries are also reduced with the help of diseases modifying therapies. Promotion of comfort, function, independence, wellness, and maintaining health is important for gaining proper growth in the treatment of MS helping to provide growth for the patients. Delaying disease progression can be possible with MS.

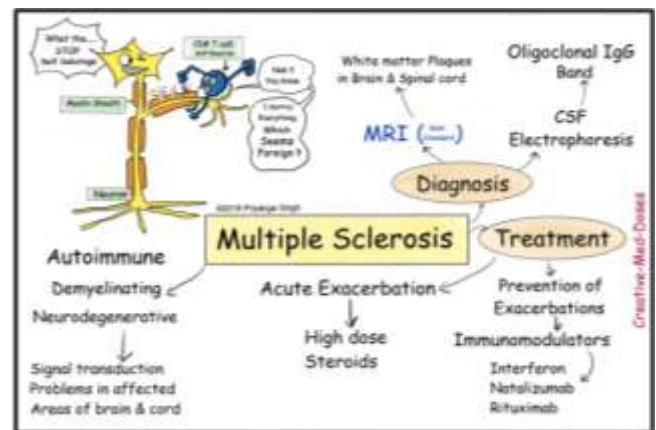


**Figure 3.** Areas affected by Multiple Sclerosis (Source: 10)

Sex Therapy and Psychotherapy are effective ways for reducing issues in a person and getting them cured of problems. Resilience counseling treatment can be done to help the person affected by MS with the help of proper exercising and different complementary therapies. This is beneficial for reducing the stress level of a person suffering from MS. Different therapies such as massage, yoga, and meditation are beneficial for reducing the effect of MS [10]. These therapies are helping to improve sleep and provide more energy which is important for gaining strength for persons suffering from MS. Complementary and alternative treatments are helping to control the issues of MS with proper medication. Cooling strategies, acupuncture, and exercise are helping to cope with MS that are effective in lowering the issues of a person.

**Development of strategies to prevent death from MS**

The prevention of MS can be developed through strategies that are beneficial by following important rules. Quitting



**Figure 4.** Multiple Sclerosis prevention strategies (Source: 9)

The limitation of disabilities over time by creating inflammatory components of the disease. The treatment strategies for MS are developed with escalation, early using highly effective therapy and induction. The sufficient amount of food contained in diet-rich fruits and vegetables, also not having meat is helping to prevent the issues of multiple sclerosis. Maintaining proper activities and also maintaining a moderate weight is beneficial for MS patients. Osteoporosis prevention can be possible with the help of these activities and these issues can easily be solved as a common issue for a person having MS. For relapsing multiple sclerosis treatment, the high-dose course for powerful steroids is helping to provide the best response for a person suffering from MS. The injection of drugs directly into the bloodstream is helping to develop a quicker response for patients suffering from the issues of relapsing multiple sclerosis [7]. The combination of genetic and environmental factors is affecting the issues of multiple sclerosis. The understanding of the last stages of MS before death can be ensured with symptoms such as vision problems, difficulty in speaking, problems developed for walking and standing, difficulty in maintaining balance and coordination, and complete or temporary paralysis conditions developed in a person suffering from difficulties in MS. The 4Ps are developed for ensuring patient care; are preventive,



predictive, participative, and personalized.

During the time of pandemic people with insufficient immune systems are affected by several diseases such as MS. This is targeting the central nervous system of a person. The strategies that are helping to reduce the issues of MS can be possible by maintaining presentational strategies for the disease. These are also helping to heal the patients suffering from diseases. Slow progression can be possible of MS with the help of appropriate vaccines that are helping to stop the growth of the disease [16]. The natural prevention from the disease can be developed by having different vitamins that are helpful for maintaining vitamin D and calcium in the body of a person. The vitamins B6 and B12 are providing energy for alternative treatment for a person affected with MS. Respiratory infection for patients is developed as a common cause of death, and reduction of the infection is the main motive to cure the patients suffering from MS.

### METHODOLOGY

This study has utilized the facilities of the secondary qualitative method to get the appropriate feedback from the research work. This section will discuss the procedure of research work and also provides an explanation of the selecting secondary qualitative method for research. Firstly, this method always uses previously used data or information. It helps the researcher to donate low effort on the information gathering. On the other hand, it also helps to provide the effort on the research work [4]. This process provides worldwide data that helps to collect information and gather experiences on this particular topic. "Common cause of death among the patient" is a versatile topic and it is not possible to visit all places to gather data. That is why the secondary qualitative method is the best to research this specific topic. In other words, this method gives the chance to explore the knowledge of the research work and add information from various sources such as journals, newspapers, magazines, and other internet sources [2]. Accordingly, the secondary qualitative method gives the opportunity to predict the future and also opens a new door for future researchers. In this context, authentic data is essential for each and every study and the secondary qualitative method is the way that can always provide authentic information and data by maintaining an ethical manner [3]. This study has also used PubMed, AMED, and MEDLINE to gather the information and it assists to know the different information on causes of death of the patients who have multiple sclerosis.

Secondary qualitative methods are helping to develop better growth for the research. Decision-making can be easy with the help of the secondary method as all the information is provided on the internet or in journals or books. This is providing a better and easy way to complete the research that is beneficial for the organizations. This method is also helping to ensure cost-cutting for the organizations as all details are already gained from the previous research papers and journals. Organizations are using this method simply to gain a proper outcome from the research that is important for

achieving major growth and benefits. This economic data collection method is also helping to understand the gaps and deficiencies that are developing with the help of additional information. The maximization of data utility can be gained with the help of secondary qualitative research that is beneficial for gaining a better outcome of the result. From the secondary qualitative research the understanding of the diseases and their different remedies that are beneficial for patients to grow [6]. Most of the cases secondary information is extremely better due to collecting proper data within a short period of time. From the previously conducted studies, it is beneficial for understanding the overall growth to overcome the issues of Multiple Sclerosis. This is also helpful for knowing the remedies that are beneficial for lowering the issues of the disease. The secondary qualitative research is also having test results that are beneficial to understand the issue of this disease and also able to understand the controlling measures or lowering the problems of the disease. In order to conduct the research properly, only scholarly journals are taken which are not older than the year 2018. This is beneficial for the research as it is able to collect data and the latest findings about the research on multiple sclerosis. Understanding the latest findings about the disease and different technological advancements that are developed for lowering the risk of the disease. Multiple Sclerosis has every detail available on the internet that is completely organized, compiled, and published which are helping to promote the overall progress of the research and gain different valuable and essential information about the research. With the help of secondary qualitative research policies gaining knowledge about different governmental research is understood is important to find out the available treatment for the patients suffering from MS. Gaining some authentic information from governmental websites available on the internet is beneficial for developing a proper roadmap for the future of the research and also helping to find out the latest technologies and medicines available for lowering the risk of the diseases in the modern time.

### DISCUSSION

A development in nerve damage disrupting the communication between the body and brain is called multiple sclerosis (MS). This disease is not curable it can only be controlled with the help of medications and maintaining the proper diet. These methods are helping to ensure the proper growth in the persons suffering from the disease. The symptoms can vary from person to person as different reactions can be seen due to the effect of this disease [15]. Commonly patients suffering from the disease are facing issues of vision loss, fatigue, pain, and impaired coordination. In the cases of MS life expectancy of the patients is getting lowered from 5-10 years [8]. As per the latest research, no cure is available for getting cured from the issue it can only be solved with the help of maintaining diet and physiotherapies. This is beneficial for slowing down the

issues that are helping to ensure the progression of the disease. The main cause of the disease is unknown till now, but it is predicted that the body's immune system is attacking its tissues which can be developed due to gene disorders. The signs of the disease are can be different for every person affected by disease. Over 1 million cases of MS are seen in India per year [1]. Life expectancy for a person suffering from MS can be 5-10 years this is an average number and can vary from person to person. The symptoms of MS can be developed in a person between the age limit of 20 and 40. The symptoms can be better once but also return the issues of the disease. But the symptoms can not be common in two people suffering from MS. The lowering of vitamin D, obesity, and smoking are developing the issue of MS in a person. These issues are creating a risk factor for the patients suffering from the disease. Different viruses and bacteria are developed with MS that are creating a dangerous issue for the growth of the disease.

The development of MS can be seen with some hereditary issues which are grown due to different vitamin and mineral deficiencies. There is no specific medical test available for detecting MS, it can only be developed by identifying similar signs and symptoms of the disease. Detailed images of the brain and spinal cord can be found with the help of MRI reports that are beneficial for understanding the issues of MS in a person. The procedure of MRI is safe and relatively non-invasive for detecting the issues of MS. Difficulty in speaking, weakness in the muscles, problems in vision, partial or complete paralysis, and even problems with walking and standing are the signs of MS that can lead to death for the patients. The issues of MS cannot go away on their own they can be reduced with the help of disease-modified drugs for slowing down the overall progress of the disease. Inflammation developed in the optic nerve has usually created the progress of the disease. A person suffering from MS can feel pain in the eye, blurry vision, and headache. These issues later can lead to complete or partial vision loss for a person. Fibromyalgia and vitamin B12 deficiency, migraine, hypertension, and amyotrophic lateral sclerosis is the similar kind of issues that can be compared with MS. The symptoms of MS can develop in a person in an abrupt manner that can create a dangerous issue for the people suffering from the disease. Prevention of MS can be ensured with the help of maintaining different measures that are beneficial for lowering the issues of the disease in a person [5]. Intaking an adequate amount of vitamin D, maintaining body weight, having a balanced diet, and quitting smoking are beneficial for lowering the risk of MS for a person. Reduction of stress and development of activities is also beneficial for preventing the issues of multiple sclerosis. A higher risk of dental issues can be developed in a person suffering from MS as teeth and gums are badly affected by the disease. A burning sensation can be developed in a person on the side of the face suffering from MS. Disruption can be found in the nerve pathway between the brain and legs can be found in the person's suffering from

the issues of MS. Increase the risk of COVID-19 can be increased in a person affected with multiple sclerosis can cause the death of a person. Disease-Modifying Therapies (DMT) are helping to lower the development of risk from MS in a person [14]. Improvement of transport of different molecules preventing the nerve from damage is developed treatments for preventing the damage from MS.

## CONCLUSION

From the study, it can be concluded that the causes of death in patients suffering from multiple sclerosis can be developed widely. This is creating different issues for the person suffering from the problem. Proper medication, and maintaining a good diet plan are helping to prevent the issues of the disease easily. Different therapies are developed to help patients facing the issues of MS. Proper counseling and other efforts are helping to ensure the growth of the patient. Different symptoms are seen in a person suffering from the issues of MS such as weak voice, and numbness in the legs and other body parts. These issues can be cured with the help of proper methods that are taken to reduce the effect of MS on a person. The problem of MS cannot be cured and it only is reduced with the help of proper medications that are beneficial for helping the patients with the disease. Sudden death cannot be seen in diseases only the issues of cognitive changes can be seen in a person affected with MS. Patients are suffering from muscle pain, and doubled vision, and maintaining an improved lifestyle is helping to gain growth from MS. Reduction of stress, eating healthy foods are helping to develop Multiple sclerosis. This can create issues of chest and bladder infections and in other cases, it creates swelling difficulties. The life expectancy of a person can be reduced by 5-10 years by facing the problem of multiple sclerosis. Head trauma can be caused by the issues of MS that develop the problem in balance, coordination, and posture issues of a person.

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