

# Good nervous systems case study example

[Engineering](#), [Aviation](#)



## Part 1

Imagine you are being chased through the woods by a hungry bear. Which nervous system would engage? (Parasympathetic or sympathetic) Why is this?

The nervous system of a human being is categorized into two major parts, the first one being the peripheral nervous system, which comprises the autonomic nervous system, the somatic nervous system and the cranial and peripheral nervous system. The second major part is the central nervous system which made up of the brain and the spinal cord.

The autonomic nervous system (ANS) plays the fundamental role of controlling the spontaneous or involuntary body functions. Such functions include such things as the digestive system, the human respiratory system, and the urinary system as well as the entire cardiovascular system.

### **The autonomic nervous system is additionally broken down into three parts:**

- Sympathetic nervous system
- Enteric nervous system
- Parasympathetic nervous system

The sympathetic nervous system allows the body to function under stress. It is responsible for the body's reaction to fear, also known as “fight or flight” response. The parasympathetic nervous system works opposite to the sympathetic nervous system and is responsible for “rest and digest” response of the body.

For example, if I am being chased through the woods by a hungry bear, I may opt to stay and courageously fight the ravenous bear or take off for the

sake of my safety. This is what is commonly referred to as the “fight or flight” reaction of the human body. The sympathetic nervous system is responsible for “fight or flight” response. The sympathetic nervous system prepares the body for the “fight or flight” response by pumping more blood to the muscles and the brain, thus increasing the heart rate and the blood pressure. It also allows the lungs to inhale more air in order to supply the body with more oxygen. The sympathetic nervous system also slows down the digestive and the urinary systems, so the body can be ready for the “fight or flight” action. Moreover, the sympathetic nervous system affects: the eyes by dilating the pupils, skin by stimulating the sweat glands, respiratory system by relaxing the bronchial muscles, and the skeletal muscles by increasing blood to skeletal muscles. The neurotransmitter activated in this situation is norepinephrine (“Brain and Nervous System Health Center,” 2014).

**Imagine that you are home with the flu. Which nervous system would engage? Why is this?**

The parasympathetic nervous system is responsible for “rest and digest” and vegetative functions of the body. In order to fight the flu or any other pathogen infection, the parasympathetic nervous system calms the body by reducing blood pressure and decreasing heartbeat. The parasympathetic nervous system affects: the eyes by constricting the pupils, skin by calming the sweat glands, the respiratory system by constricting the bronchial muscles, and the skeletal muscles by decreasing blood to skeletal muscles. The neurotransmitter activated in this situation is acetylcholine (“Brain and Nervous System Health Center,” 2014).

## Part 2

Jack is a 78 year old man. While most of the time Jack is able to live by himself, he does often forget where he put his car keys or what time his next doctor's appointment is. Would you classify Jack as an Alzheimer's patient? Why or why not? What type of assistance would you recommend for Jack?

“ Alzheimer's sickness is a progressive condition that annihilates the human memory and other essential intellectual functions,” according to the Mayo Clinic website.

Although Jack's behavior does not clearly classify him as an Alzheimer's patient, the symptoms suggest an onset of Alzheimer's disease. Jack's age, misplacing things, and memory loss that disrupts daily life are some of the most prominent symptoms Alzheimer's (“ 10 Early Signs and Symptoms of Alzheimer's,” 2014).

In addition to the actuality that there's no known cure for Alzheimer's illness, there is no known method to bar the disease from progressing. However, support and treatment are available that can slow the symptoms and help improve the quality of life for the patients, for example, some form of medicines, such as those recommended by the United States Department of Health and Human Services, can be exceptionally instrumental in moderating the signs and symptoms of Alzheimer's Condition (“ Alzheimer's Disease: Treatment,” n. d.).

Moreover, there are some alternate ways which can help an Alzheimer's patient. The most important is support and patience from family and friends. Moreover, massage, physical exercise, and aroma therapy can boost energy, mood, and reduce the anxiety caused by Alzheimer's.

## References

10 Early Signs and Symptoms of Alzheimer's. (2014). Retrieved January 15, 2014, from

[http://www.alz.org/alzheimers\\_disease\\_10\\_signs\\_of\\_alzheimers.asp#signs](http://www.alz.org/alzheimers_disease_10_signs_of_alzheimers.asp#signs)

Brain and Nervous System Health Center. (2014). Retrieved January 15, 2014, from

<http://www.webmd.com/brain/default.htm?names-dropdown=MD>

Mayo Clinic Staff. (2013). Alzheimer's Disease. Retrieved January 15, 2014, from

[http://www.mayoclinic.](http://www.mayoclinic.org/diseases-conditions/alzheimers-disease/basics/definition/CON-20023871)

[org/diseases-conditions/alzheimers-disease/basics/definition/CON-20023871](http://www.mayoclinic.org/diseases-conditions/alzheimers-disease/basics/definition/CON-20023871)

U. S. Department of Health and Human Services, National Institute on Aging.

(n. d). Alzheimer's

Disease: Treatment. Retrieved from [http://www.nia.nih.](http://www.nia.nih.gov/alzheimers/topics/treatment)

[gov/alzheimers/topics/treatment](http://www.nia.nih.gov/alzheimers/topics/treatment)