



MS Prevalence Study: Herculaneum, Jefferson County, Missouri

What was the purpose of this study?

The purpose of this study was to identify all persons with multiple sclerosis (MS) living in Jefferson County, Missouri.

Why was this study done?

This study was done to respond to concerned residents about the number of persons with MS in the Herculaneum area. Community residents are concerned about the impact of releases from an active lead smelter in their community.

Who conducted this study?

This study was conducted by the Missouri Department of Health and Senior Services with funding from the Agency for Toxic Substances and Disease Registry, a federal public health agency located in Atlanta, Georgia.

What is multiple sclerosis?

MS is a chronic disease that steadily weakens the central nervous system. MS affects nerve fibers found in the brain and spinal cord. The inflammation of the nervous tissue causes the loss of myelin. Myelin is a fatty material that protects the nerve fibers in the brain and spinal cord. With the loss of myelin, many areas of scar tissue ("sclerosis") are formed along the covering of the nerve cells, causing the messages to and from the brain to be altered.

What is the cause of MS?

The cause of MS is not known. Factors that may affect the onset and outcome of MS are: climate, diet, environment, genetics, physical and emotional stress, and infections. MS is more common in women than in men, and in Caucasians than in other ethnic groups. The average age of onset is between 18 and 35 years.

How many people have MS?

MS affects 250,000 to 400,000 persons in the U.S. It is estimated that there are 39 to 173 patients with MS for every 100,000 people in the U.S., depending on the geographic location.

How was this study conducted?

1. Participant Selection

Persons with MS were identified by:

- Reviewing existing records from hospitals, emergency room and office visits, nursing home admissions, rehabilitation facilities, and death certificates;
- Mailing to all practicing doctors in neurology, primary care providers and nursing home administrators; and
- Confirming self-referrals of persons with MS.

2. Inclusion Criteria

To qualify as a study participant, all of the following criteria must be met:

- Residence in Jefferson County;
- Clinical visits between January 1, 1998 and December 31, 2002; and
- Confirmed diagnosis of possible, probable, or definite MS by a neurology doctor.

3. Data Collection and Quality Assurance

- Medical records were reviewed by trained medical professionals and neurology specialist to confirm diagnosis of MS.

4. Mapping of Cases

- Using a specialized computer program, the street addresses of all persons with confirmed MS diagnosis were mapped on the Jefferson County map in order to identify any unusual accumulation of cases in one area.

What were the main findings of the study?

The main findings of this study are:

1. The prevalence of MS in Jefferson County was 105 per 100,000 populations; in other words, there were 105 people with MS for every 100,000 Jefferson County residents.
2. The majority of people with MS were women and white non-Hispanic.
3. The median age of the study participants was 47 years, which means that half of all cases were younger than 47 years, and the other half was older than 47 years.
4. MS prevalence was 169 per 100,000 among women and 41 per 100,000 among men.
5. The age group with the highest occurrence for MS was 50 to 59 years.

6. The prevalence of MS in Jefferson County was not unusual, when compared to other areas of the U.S. or around the world.

What are the limitations of this study?

The limitations of this study are:

1. This study did not include those persons who have moved away from Jefferson County and may have later developed MS.
2. This study was limited to a five-year period.

What follow-up activities are planned?

The Missouri Department of Health and Senior Services is working with the federal Agency for Toxic Substances and Disease Registry to possibly get involved in a study to investigate the role of environmental exposures and genetic susceptibility in the development of MS.

Who can I contact if I want more information?

For more information, please contact:

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