



Multiple Sclerosis Society

February 2010

## MS Essentials Factsheet

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# Temperature and MS

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A rise in temperature does not affect everyone with multiple sclerosis (MS), but it is common for people with MS to find that at least some of their symptoms get worse when they get hotter - 'everything goes haywire' is how one person with MS describes it.

Different symptoms get worse in different individuals, and any symptoms can be affected. Effects happen as soon as the body temperature changes, but for the vast majority of people symptoms return to normal as soon as the body cools.

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## Feeling the heat

The temperature effect is often described as Uhthoff's phenomenon,<sup>1</sup> after Dr. Wilhelm Uhthoff who first described it in 1890. The worsening of symptoms due to heat is widely recognised and very common. People generally complain of blurred vision or sensory systems after exercise, or of weakness in one or both legs. Prolonged exposure to heat might make fatigue worse, which might in turn make other symptoms feel worse.

No long-term harm is believed to come from body warming, even if the consequences of warming can sometimes appear to be severe at the time and symptoms usually return to their existing levels as the body cools down.

Heat or exercise related symptoms may be brought on by activity, sunbathing, hot baths, emotion, exercise, fever or other things associated with an increase in body temperature. Many people with MS find hot weather difficult, but, even in cooler weather, hot showers, or even just using a hair dryer can sometimes be a problem.

## Why does temperature affect people with MS?

Heat appears to stop nerve fibres from working properly - if the fibres or their protective outer layer (myelin) have already been damaged by MS. Nerve fibres allow messages controlling different parts of the body to move around the brain and spinal cord, in the form of electrical impulses. This is known as 'nerve conduction'.

In the brain or spinal cord, a nerve damaged by MS finds it harder to conduct these electrical impulses. Messages may get through at normal temperatures, but they are on the verge of failure. Body warming makes conduction weaker still, so some damaged nerve fibres stop working entirely, until they are cooled down.

It is important to be aware of your baseline temperature. A 'normal' temperature is around 37 degrees, but 'normal' for you may be within a few degrees of this either way. Anything beyond your baseline temperature may affect your symptoms. You may want to invest in a thermometer to check. Listen to your body and take measures to cool down if you are feeling overheated.

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## Cooling down

Various cooling methods have been developed, but some are simple and cheap, such as:

- drinking cold liquids
- sucking ice cubes
- cool baths (start with warm or tepid water and increase the coldness to avoid a shockingly cold experience)
- opening a window or sitting in front of a fan

Cooling Therapy is a complementary treatment that is unique to MS. Some people use body-cooling garments - often in the form of 'cooling vests'. These can be passive or active. Passive garments use evaporation or ice packs for cooling: active garments use circulating coolants.

Beneficial effects of cooling garments have been noted in several small clinical studies, and their use is usually well tolerated.<sup>2</sup> Before buying anything you may want to talk to your MS nurse. You may be able to try out several garments before deciding. If on holiday in warmer temperatures, there are several things you can do to keep your cool:

- avoid hot environments like kitchens or very sunny rooms
  - avoid long car trips where possible, or use the air conditioner
  - wear light-coloured, cotton clothing
  - keep your head covered
  - avoid direct sunlight
  - look for air-conditioned places
  - increase your fluid intake
  - keep a hand-held mini-fan close by
  - moisten clothing using a water spray
  - dip sports sweat bands in cold water and put on both wrists
  - explore clothing with 'wicking' properties which 'wicks' moisture away from the skin and can help to keep temperatures stable
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## References

- 1 Compston, A. et al. (2005) *McAlpine's Multiple Sclerosis (Fourth Edition)*. Churchill Livingstone, Elsevier, p639.
  - 2 Polman, C. et al. (2006) *Multiple Sclerosis, the guide to treatment and management (Sixth Edition)*. Demos, p133.
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## Useful publications

*Multiple Sclerosis 300, Tips for making life easier (Second Edition) (2006)* by Shelley Peterman Schwartz. Published by Demos.

*Multiple Sclerosis the Questions you have the answers you need (Third Edition) (2005)* by Rosalind C. Kalb. Published by Class Publishing.

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### MS Helpline

The MS Helpline offers confidential emotional support and information to anyone affected by MS, including family, friends, carers, newly diagnosed or those who have lived with the condition for many years. Calls can be made in over 150 different languages, via an interpreter. Call freephone 0808 800 8000 (weekdays 9am-9pm, except bank holidays) or email [helpline@mssociety.org.uk](mailto:helpline@mssociety.org.uk)

## Authors and contributors

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Suggestions for improvement in future editions are welcomed. Please send them to [infoteam@mssociety.org.uk](mailto:infoteam@mssociety.org.uk)

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