

*Not everyone is used to wearing headwear throughout the working shift. Some even find discomfort to the point of experiencing headaches. This document provides some background information about headwear and headaches, and gives some useful tips to ensuring a comfortable SmartCap experience.*

## **Wearing SmartCap**

SmartCap headwear, either caps or headbands, need to be fitted properly to ensure that they are comfortable to wear, and are obtaining the necessary signals. This means ensuring that the headwear is forward facing and centred, that there is no hair between the sweatband and forehead, and that the headwear is neither too loose nor too tight.

### **How do I get the correct tightness?**

SmartCap should not feel tight. The best way to get the right fit is to loosen your SmartCap headwear, and wait for one minute to see if the “Cap needs adjustment” message appears. If not, continue to loosen. Incrementally loosening the cap while making sure you avoid this message ensures you will have the loosest fit possible for that style.

### **Is it possible to get headaches wearing SmartCap?**

Yes, but these are preventable. Anything that puts continuous pressure on the head such as tight hats, headbands, goggles and glasses can give rise to headache. Below we explain some of the everyday causes of headaches, and give more detail on this particular type.

## **Everyday causes of headaches**

Headaches are relatively common, but not all headaches are the same. The location of the pain, how severe it is, how long it lasts, what causes the pain and how often it occurs are some of the factors physicians use to define different types of headaches. Below are some of the most common headache types.

**Tension headache:** a common type of headache associated with steady, non-throbbing mild to moderate pain, usually on both sides of the head. Often feeling like a tight band of pressure around the head, tension headaches can be brought on by stress, lack of sleep, poor posture or muscle injury in the back, shoulders or neck.

**Migraine headache:** occurring in about 15 per cent of adults, migraines are throbbing pain usually on one side of the head. They can last for hours at a time, and may be brought on by certain foods, changes in weather, lack of food or sleep, as well as severe dehydration.

**Cluster headache:** a rare yet severe headache more commonly found in tobacco smokers, cluster headaches are most commonly brought on by excessive alcohol consumption or significant accrual of sleep debt.

**Eye-strain headache:** If you have visual problems that have not been addressed by prescription glasses or contact lenses, you can get an eye strain headache, which typically causes pain and a heavy feeling around the eyes.

**Ice-cream headache:** Eating something very cold can cause a sharp pain in the middle of your forehead or over one temple. People who get migraines may be more likely to get an ice-cream headache — so-named because the pain comes on immediately after eating ice-cream.

**External compression headache:** mild to severe headaches that can occur when any head wear puts continuous pressure on your forehead or scalp. Often referred to as “swim-goggle headaches”, pain relief is prompt after the pressure is removed.

## External Compression (EC) Headaches

### Symptoms

The symptoms of an EC headache are non-pulsating, dull pain that feels like constant pressure. The pain tends to be greatest in the location(s) of the pressure.

### Causes

EC headaches are caused by any type of headwear that places pressure on the head, including caps, helmets, headphones, sunglasses and goggles.

### Complications

For migraine sufferers (unrelated to the wearing of headwear), an EC headache may trigger a migraine if no treatment or mitigation is in place.

### Treatment

Of all forms of headache, EC headaches are the easiest to treat. Removing the external pressure for periods of time, and ensuring headwear fits correctly is the best treatment. As with any ailment, the advice of a medical professional should be sought if discomfort persists.

## Tips for SmartCap Comfort

- **Get the right fit:** Make sure you choose a style and size of SmartCap headwear that can give you a good fit. If the headwear seems to feel either too loose or too tight but never quite right, try a different style.
- **Keep it clean:** Washing your SmartCap regularly using the SmartCap Headwear Care Instructions ensures that the forehead contacts are working the most effectively. This means that you won't feel the need to wear your SmartCap uncomfortably tight to ensure consistent measurements.

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*“...make sure it fits properly and is positioned carefully. Try various styles and sizes as you look for the most comfortable options. Also, if possible, try to temporarily take off head wear frequently to remove the pressure”.*

*- David P. Martin, M.D., Ph.D*



- **Give yourself a break:** When safe to do so, and in-line with site policies and procedures, it's a good idea to take of your SmartCap. Headwear applies a small amount of pressure to the skin, which over time can lead to a headache. Giving yourself a break when possible may help.

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*“Headaches are the second most common condition associated with dehydration. As simple as it seems, you can markedly improve headaches just by drinking enough water”.*

*- Dr. David Brownstein, M.D.*

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- **Hydrate:** Being appropriately hydrated is key to comfortably wearing headwear. Make sure you drink the recommended amount of fluids for your level of activity, and avoid excess caffeine and alcohol.

## How SmartCap works

SmartCap headwear uses ultra-low power, passive sensors to measure EEG. The calculations of SmartCap fatigue levels are made in the Processor Card, which uses microelectronics for processing and Bluetooth communications. All elements of the SmartCap system, including headwear and Processor Cards, comply with the relevant standards for emissions, immunity and electromagnetic radiation.

### What does all of this mean?

The SmartCap headwear is just like any other headband or cap. There's nothing in the electronics that can cause discomfort or headaches.