

Headsets make your business safe and sound

Two recent independent field studies show that the frequent problem of neck and back pain experienced by office workers can be significantly reduced and even eradicated by replacing telephone handsets with headsets

Ergonomics is economics

Interest in office ergonomics has radically increased in the past decade, boosted by rising costs associated with ergonomic injuries among office workers known as musculoskeletal disorders (MSD). The importance of organizing office workplaces to match human physical abilities is now widely acknowledged, and traditional desks, chairs and computers are being replaced by new ones that better comply with the human anatomy and working routines performed by today's knowledge workers. The time has now come to take a closer look at the role 'phone ergonomics' play in this context.

In today's workplace telephones are indispensable, since telecommunication is a crucial and growing part of office work. However, using a traditional telephone handset often involves strenuous movement and unnatural postures such as cradling the handset between neck and shoulder, and having to stretch to reach for things. Research in office workplace ergonomics (e.g. NOISH 1997¹, SjoWE & H, 1992²) clearly indicates that use of a classic telephone handset by office workers is a major source of work-related neck and back pain. The US National Institute for Occupational Safety and Health (NIOSH) defines "work-related" musculoskeletal disorders (WMSDs) as those injuries created and/or worsened by the work environment. WMSDs can be severe and painful - ranging from tingling to numbness, and resulting in time off work, reduced productivity and temporary or permanent disability. Consequently, WMSDs are also believed to have financial consequences in the form of increased compensation costs to office workers.

New user studies identify headsets as "pattern-breakers"

Evidently, many office workers have "adapted" their motion patterns and work routines to the telephone handset and its apparent limitations - not vice versa - resulting in uncomfortable and harmful postures, that in the short-run inflict pain, typically in the head (headaches), neck, back and shoulders, and in the long-run potentially cause permanent damage to the tendons, tissue, muscles, nerves and supporting structures. Such negative patterns are not easily broken without some kind of physical intervention, where replacing the telephone handset with a headset provides the most obvious, effective and well documented improvement that can be obtained.

Danish/German field test demonstrates instant improvement

A recent field studyⁱ in Denmark and Germany equipped more than one hundred office workers in different office workplaces with the GN 9120 wireless headset. The study showed that for new headset users with 2-4 hours daily phone use, physical comfort can improve drastically by replacing the telephone handset with a headset. 30% of the test group experienced a significant improvement in physical comfort directly related to pain in the neck or back during the test period of two working weeks.

Swedish field study shows long-term effect

A Swedish office workplace studyⁱⁱ dating from March/April 2005 studied a hundred people in various job types who had used a headset for about a year, and showed that:

- for 26% of respondents, neck and back pains "totally disappeared"
- for 52% of respondents, inconvenience "diminished significantly" after they started using a headset.

87% of users in the Swedish study used a corded headset and 85% used the headset for more than 2 hours a day. A further 43% used the headset for more than 4 hours a day.

Ergonomic benefits achieved by using a headset

Why does replacing telephone handsets with headsets have such a big effect on musculoskeletal conditions? Seemingly, strain patterns are broken by introducing this alternative to the telephone handset.

As a personal communication tool, the headset can transform static positions and strenuous movement into natural dynamic movements conducive to the musculoskeletal system and allowing the user to stimulate tendons, tissue and blood circulation by moving the entire body freely. The human body is capable of performing dynamic work for hours at a time. The more we move the better it suits our musculoskeletal system, sustaining performance.

Headsets are lightweight and typically weigh considerably less than telephone handsets (6 to 10 times less). This literally takes a load off the users' shoulders compared to picking up and holding a telephone handset. Furthermore, headsets leave the upper body free to move dynamically, and users can stand up and move their entire body. Further benefits occur if the headset is wireless. Users can move their entire body freely and move around in the office activating muscles and tendons in the lower body, which will loosen up muscles and stimulate blood circulation.

Typical strenuous postures appear when the user tries to solve other tasks while holding the telephone handset. Either one hand has to hold the handset, or the handset is cradled between neck and shoulder to free the hands up for other tasks. Both postures are inexpedient because they are neither healthy nor ideal for task-solving. In this context headsets leave both arms and hands free for typing, retrieving information and handling objects.

To sum up, the telephone handset becomes the center of the user's radius of action limiting physical movement and capabilities (figure 1). The headset on the other hand moves communication to the head, making the user the center of activities which offers the most natural pattern of motion (figure 2).

Figure 1: Handset = limited radius of action and handset as center (handset centric communication)

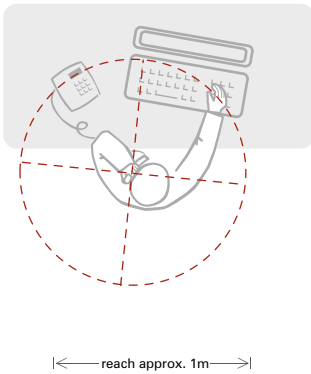
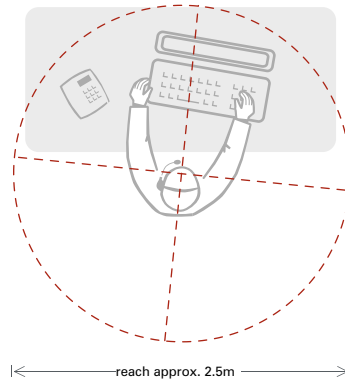


Figure 2: Headset = large radius of action and person as center. Free upper body movement (person centric communication)



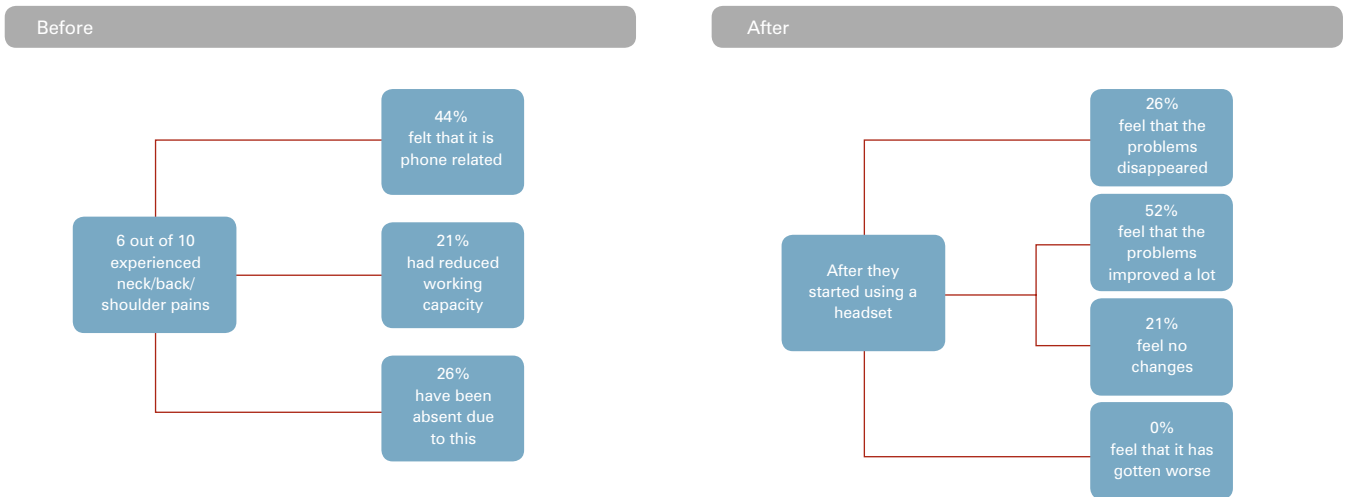
Quick wins and long term gains

The aforementioned Danish/German field study clearly showed the very rapid effect of introducing headsets to an office workplace. In just two working weeks, 30% of the test group who replaced their telephone handsets with wireless headsets experienced a statistically significant improvement of their physical well-being. In this case defined as “pain in neck and/or back”, the most common pains related to phone usage.

This group represented many different job types, which means this finding indicates that once identified problems with phone-related neck and back pain can be reduced and even eradicated almost instantly, by breaking the negative patterns associated with a telephone handset. The very rapid effect could also be influenced by the fact that the test group tried the GN 9120 wireless headset, which offers total freedom of movement.

The aforementioned Swedish study of an equally diverse group of users indicates that the percentage experiencing improvement in the long run can be even higher than 30%. After using a headset for approximately one year, more than half (52%) of those interviewed who experienced problems, stated that the problems have “significantly improved” and 26% stated that they have “totally disappeared”.

The long period of study also indicated that headsets do in fact solve the problem permanently and not just shift it to another part of the body. No new pains or inconvenience were reported. Those interviewed in the Swedish study experienced severe strains and pain before replacing telephone handsets with headsets, and no new problems arose after they started using a headset:



Ref.: Swedish field study (March/April 2005)

Wireless or corded – what are the ergonomic consequences?

Seen from an ergonomic point of view, the main function of using a headset is to avoid strenuous posture and to increase freedom of upper body movement. This “pattern-breaker” function is achieved with both corded and wireless headsets.

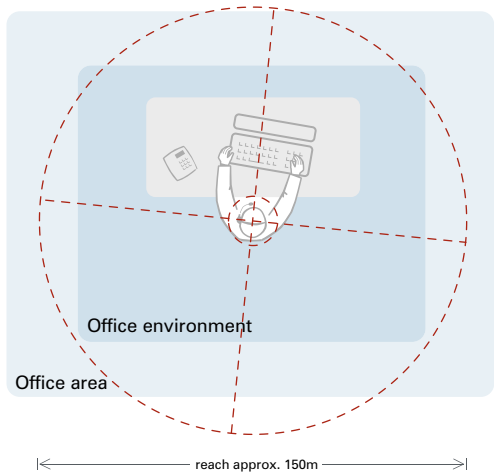
Of course, wireless headsets offer the ultimate freedom of movement and therefore present an ergonomically optimal solution (see figure 3).

The extreme freedom offered by wireless headsets adds ergonomic value if work routines allow the user to get up and walk around in the office or office area. The variation between sitting down, standing up and the movement of the entire body that increases blood circulation, suits the natural needs of the musculoskeletal system well.

Modern wireless headsets with a working range of up to 150 meters (450 feet) increase the user's radius of action far beyond the desk, and this freedom not only apparently increases in task-solving capabilities, but also allows users to move both upper and lower body more freely, which is ergonomically beneficial.

However, the cord on a corded headset does not constrain the upper body movement to a physically counterproductive level, which is by far the most important concern with regard to neck and back pain. The cord is very lightweight and is practically unnoticed by the user, who can even stand up and move around in a smaller area depending on the length of the cord.

Figure 3: Wireless headset = wide radius of action and person as center. High level of freedom of movement (personal area centric communication)



Who should you look for in your office?

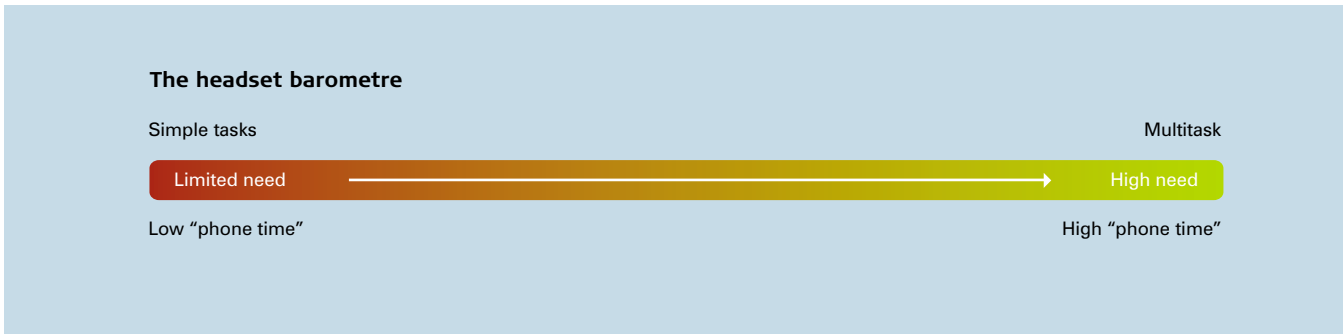
There are two factors to consider when identifying potential headset users in an office:

- Time factor: how much time is spent on the telephone?
- Task factor: what kind of tasks are solved while phoning?

These two factors either singly or combined define the user's need for a headset and the level of potential benefit. If you are on the phone for a substantial amount of time every day or have tasks that demand both hands free, your personal ergonomics will gain significantly from using a headset.

The headset barometer

The simple model below gives a general impression of where to look for users that can benefit from using a headset. Apart from the general mapping of time spent and tasks solved, individual factors such as age and physical condition must be taken into consideration. In the model, the likelihood of benefit to the user is shown in green.



The time factor

Users can roughly be divided into 3 user categories, namely: light, medium and heavy users, primarily characterized by "phone time":

User	Light	Medium	Heavy
Phone time	On the phone for less than 1 hour per day	On the phone for 1-2 hours a day	On the phone for 2-4 hours a day or more
Potential	No urgent need	Possible improvement	Proven effect

The task factor

Users who solve simple tasks like writing down a telephone number or transferring a call do not necessarily need a headset. But when tasks become a little more complex, such as using a PC keyboard, making notes or turning over pages in a report, headsets offer the freedom without adopting any strenuous posture. In relation to tasks, users can also be divided into 3 main groups:

Task	Simple	Light multitasking	Multitasking
Type of tasks	Limited phone-related task-solving and no need for multitasking	Some phone-related task-solving and occasional need for multitasking	Substantial phone-related task-solving and frequent multitasking
Potential	No urgent need	Possible improvement	Proven effect

Prevention is better than cure.

Phone-related pain in neck and back is no different from other health-related issues: prevention is better than cure. We have documented above that there are short- and long-term physical benefits gained by using headsets instead of telephone handsets.

We have barely touched upon the financial, efficiency and productivity benefits. It seems obvious that a user who experiences no physical inconvenience or pain will be more efficient. Further, increased freedom of movement and the fact that both hands can be used simultaneously increases user productivity.

We recommend you consider the facts above and make your own evaluation of your office personnel. Map your findings into a business case where the pros and cons are listed to obtain an overview of physical and financial aspects of replacing telephone handsets with headsets. And you can go even further and form a headset policy that clearly states why, who and how headsets are used in your business.

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If you need inspiration or more information to feed this process, please do not hesitate to contact us or visit our website for price and product info.

¹ Musculoskeletal Disorders (MSDs) and Workplace Factors: A Critical Review of Epidemiologic Evidence for Work-Related Musculoskeletal Disorders of the Neck, Upper Extremity and Low Back, Chapter 2. Washington, D.C. 1997 (<http://www.cdc.gov/niosh/ergosci1.html>)

² Scandinavian Journal of Work, Environment & Health 1992; 18(Suppl 2):p. 123-126 (<http://www.sjweh.fi/index.php>)

ⁱ A field study conducted in Denmark and Germany in September/October 2004 with 57 new headset users and 48 persons in a control group in ordinary office workplaces in Denmark and Germany initiated by GN Netcom and conducted with the assistance of an independent research agency. The field test was conducted during two, 2-week periods (one period where the test group used a telephone handset and one where they used a headset – the GN 9120 wireless headset). The test group worked in a wide variety of functions from administration, finance department, sales, marketing to management in order to examine a broad and relevant spectrum of job functions. The field test investigated the physical comfort (specifically related to back and/or neck pain).

ⁱⁱ An anonymous field test with one hundred participants in various job types in ordinary office workplaces in Sweden. The study was carried out as telephone interviews in March/April 2005. All respondents had used a headset for approximately a year.