A COMPLETE GUIDE TO ERGONOMICS IN THE OFFICE

Everything you need

to know about ergonomics - from definition to disorders and prevention.

contour

Office ergonomics is critical to our health, as we spend most of our days in the office sitting in the same working positions. As such, these positions impact our health significantly and take quite a toll on our physical well-being.

Inappropriate and unnatural working positions can create congestions in, for example, wrists, shoulders, and neck, which ultimately cause temporary and chronic disorders. All of this starts with poor ergonomics.

Dissatisfaction, sore joints and muscles, and wear and tear of the body are direct consequences of an ergonomically poor workplace. This directly impacts workplace sick leave. It can be challenging to track, but it tends to manifest itself through internal evaluations of the working environment, e.g., at a workplace assessment.

The good thing is that you can do a lot with doing the right exercises, changing your behaviour, and getting the proper equipment to ensure good ergonomics in the office and avoid strains. We dive deeper into all of this in this guide.

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Ergonomics

What is ergonomics?

Fundamentally, ergonomics is about preventing injuries caused by both actual work and as a consequence of the working environment.

If we zero in slightly further, it is mainly focused on preventing injuries and strains due to inappropriate working positions and repetitive muscle work.

It is primarily the repetition of monotonous movements that strain the body – or part of the body – if the work is done without the right equipment or improper setup.

Is it especially work with the following characteristics that increase the risk of congestion:

1. Work with a high degree of repetitiveness
2. Work at a high pace
3. Work that requires heavy lifting.

Static work such as assembly line work or office work is a typical example of situations that often lead to muscle pains, which is why a great deal of research has been done within the field.

Ergonomics explained briefly

Ergonomics is an applied science concerned with designing and arranging things people use so that the people and things interact most efficiently and safely — also referred to as biotechnology, human engineering, human factors.

Initially, the work ergonomics stem from the Greek word "ergon", which means to work, and the word "nomos", which means law.

Source: Merriam-Webster

Ergonomics can be referred to as work design and how we implement our work setups. It can be everything from lifting techniques to the equipment we use to prevent work from causing damage.

In a modern workplace, ergonomics cover the entire space. The physical, such as tables, chairs, screens, keyboards, and mice, combined with the psychological environment.

Why is ergonomics important?

Repetitive work strains the same tendons and muscles over and over. When we go through a full working day stressing the same muscles and then repeat this every day each week, it will ultimately take a toll on our health. This is especially true if this stress occurs in an odd position that is not natural or appropriate for the human body.

In the offices countrywide, numerous workers deal with pains in the shoulders, necks, arms, and hands due to poor ergonomics related to screenwork.

According to a 2021 Health & Safety Executive survey, it was shown that 45% of all work-related musculoskeletal disorders (WRMDs) were located in the upper limbs and neck, which is also the most impacted body area. While the overall cases of WRMD are trending down over the last two decades, the numbers are still high across the UK.

When digging a bit deeper, the third most mentioned cause of WRMD – after only manual labour and working in awkward positions – was repetitive keyboard work.

This does not only cause harm to workers but also directly influence productivity in the workplace.

To combat this, an investment in ergonomic equipment and educational material can reduce sick leave and WRMDs. Additionally, it would reduce the risk of financial impact related to a reduced workforce and repeated injuries with the employees.

Source: Health & Safety Executive

Suffering related to poor ergonomics

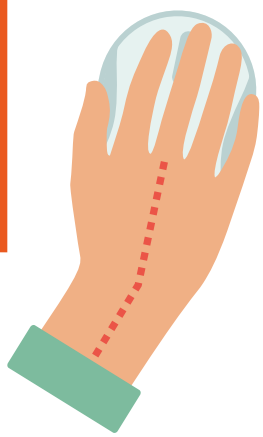
Which ailments are caused by poor ergonomics?

The specific conditions connected to poor ergonomics are related to the body's stress. As such, the different working tasks and positions that are done during the day are vital to your overall health, as they decide your ergonomic challenges.

Ailments caused by poor ergonomics can be very different but often focus on muscle and joint injuries alongside tendon and nerve pain.

Some of the most specific diagnoses, according to Princeton University, is found in hands, arms, and shoulders. Here you can find some of the most common conditions:

1. RSI/Mouse arm – congestion of hand, wrist, forearm, and shoulder
2. Finger and wrist pains – congestion and arthritis
3. Tendon disorders – e.g., tendonitis and tenosynovitis
4. Tennis elbow – inflammation in the elbow tendon
5. Carpal tunnel syndrome – pinched nerve



For employees who work in an office, it is typically the working position and use of mouse and keyboard which, through repetitive work, can stress the body and cause issues in the back, neck, shoulders, arms, hands, and fingers. We refer to these as RSI – repetitive strain injuries.

RSI or Mouse arm

One of the most common ailments for office workers is working with a computer mouse. Mouse related injuries can cause pain in the hand, wrist, forearm, and shoulders. They are commonly referred to as a "mouse arm", a computer-related RSI.

Mouse arm occurs through prolonged, repetitive computer work, which requires the wrist to be kept in a fixed, unnatural position. It is often related to precision work, e.g., graphic design but can occur across various tasks.

You need a comfortable mouse to reduce arm strain. As such, you must ensure that your computer mouse fits your hand in size to provide a proper match. If not, you utilize too much force when you click or scroll.

A poorly ergonomic setup creates stress across the upper limbs, triggering inflammation in the hands, arms, or shoulder. The mouse arm can also directly affect other issues such as a pinched nerve or muscle myosis. The common denominator, however, is the local congestion.

Treating RSI

As congestion causes mouse arms, treatment is primarily dependant on reducing the strain on hands, arms, and shoulders.

By removing the cause of the issue, your body can calm down and reduce inflammation and myositis, making the condition disappear over time.

The pain itself, if severe, can be treated with painkillers and – in rare cases – steroids to block the symptoms.

Treatment summed up:

1. Reduce stress
2. Reduce pain through painkillers
3. In worst-case scenarios, steroids can be helpful to block pain

This article has gathered everything you need to know about mouse arm symptoms, causes, treatment, and prevention.

Pains in fingers and wrists

If you feel pain in your fingers or wrists, it can be due to congestion related to static and repetitive work in front of the computer.

If you are sitting in an awkward working position, typing away all day with no rest for your forearms or with a traditional computer mouse, it can lead to stress on muscles and tendons in your hands and fingers. If your hand hurts from mouse work, it is often correlated with the mouse arm.

Pains in fingers can be a sign of arthritis, which often starts with people experiencing pain while working, which then transitions into consistent pains and reduced mobility and weakened fingers.

Treating pains in fingers and wrists

If your fingers are aching or experience wrist pain from mouse work, the treatment is similar whether you deal with common congestion or arthritis.

It is all about relieving muscles, joints, and tendons by ensuring better working positions, ergonomic equipment, and – in some cases – pain treatment.

The medical approach can be expanded if treatment does not cause the desired effect. In the case of arthritis, a final solution can be surgery if required.

Treatment summed up:

1. Secure a better working position
2. Reduce stress on muscles, tendons, and joints
3. Reduce pain through painkillers
4. In case of arthritis, steroid blockage or surgery can be necessary

Source: Versus Arthritis on managing symptoms

Tendon ailments

Tendons connect muscle and bone. The tendons run in a sheath that makes them function more smoothly by the hands and feet.

It can be inflammation if you experience pain in the wrists or forearms when working. There are two kinds of inflammation to look out for - tendonitis and tenosynovitis.

Tendinitis is a condition in which a tendon is inflamed, causing swelling and pain. Tendons are strong cords of tissue that connect muscles to bones. So what is tenosynovitis? Where tendinitis zeroes in on the tendon, tenosynovitis is linked to inflammation in the sheath around a tendon.

Many people develop these conditions related to repetitive motions that stress the tendons. Additionally, the tendons tend to stiffen up as we get older, why the risk of developing tenosynovitis or tendinitis increases as we age. They are most common around the shoulders, elbows, wrists.

Source: NHS report, "Inflamed or swollen tendon (tendinopathy and tenosynovitis): aftercare advice", August 2020.

Treating tendon ailments

Treating tendon conditions requires that you keep your wrists steady. A support bandage or wrist splint is a valuable tool to use in terms of keeping your hand at ease. It can take weeks, even months, before you can start removing the splint and use your wrist normally.

You can benefit from taking painkillers or anti-inflammatory medicines to reduce inflammation in the early stages. In worst cases, adrenal cortex hormone can be used, while it only temporarily keeps the symptoms in check.

To support your treatment, it is an excellent idea to strengthen the surrounding muscles and tendons through fitness and cardio to avoid relapses. However, it must be done with caution.

Treatment summed up:

1. Rest your wrist
2. Use a wrist splint or support bandage
3. Reduce pain through painkillers and anti-inflammatory medicine
4. Use adrenal cortex hormone in worst-case scenarios

Tennis elbow

If you are having pains on the outside of your elbow or forearm, it can signify that you are suffering from tennis elbow. It is a condition caused by inflammation in the tendon by the elbow.

Pain and weakness are the hallmark signs of tennis elbow. However, you may also experience numbness and tingling, especially with a pinched nerve in the elbow. With a pinched nerve, your nerve near or in your elbow is entrapped, causing ulnar nerve pain and tingling, numbness, and weakness in the hand, wrist, and arm. The most common nerve entrapment or pinch at or near the elbow is your ulnar nerve.

While the inflammation related to the tennis elbow is usually placed around the elbow, the pain can travel down in the forearm. A severe case can mean pain across most of the arm.

The inflammation often occurs due to short, intense congestions such as repetitive movements using a traditional computer mouse.

Treating tennis elbow

Since it is a condition based on congestion, treatment is all about reducing stress and minimizing pain.

To do this successfully, you must identify the activities that cause the inflammation and strain on the elbow tendon. If you work at a screen daily, you might need to look at how you are set up at the computer and what mouse and keyboard you are using. A simple change to desk height or acquiring an ergonomic mouse can do wonders to reduce the impact on your body.

Treatment summed up:

1. Reduce the strain
2. Minimize the pain

Carpal tunnel syndrome – nerve pinch

If you are experiencing pain in your hand – particularly at night – alongside a tingling sensation in your fingers, it can signify that you are suffering from carpal tunnel syndrome. CTS can cause numbness and pain in your hand and fingers, as it stems from pressure on a nerve in your wrists. Additionally, you lose grip power, so you may have a reduced ability to grab and carry stuff in your everyday life.

The carpal tunnel is located in the palm, and through it runs the sensory nerve. The condition happens when there is not enough space for the nerve to run smoothly through the carpal tunnel, which creates tension and irritation. Ultimately, this causes pain and a tingling effect.

CTS is directly linked to congestion caused by repetitive motions. It is often seen with industrial workers, heavy machine operators, hairdressers, and those, who work all day in front of a computer.

Treating carpal tunnel syndrome

CTS sometimes gets better by itself in a few months, but often you are needed to take direct action to reduce the stress on the hand and wrist. One way to do so is through a wrist splint.

You wear a wrist splint on your hand to keep it straight, as it helps to relieve pressure on the nerve. You will have to wear a splint for at least four weeks before you start to experience an improvement in your condition.

Additionally, you must look into how your workstation affects your hands and wrists to improve. One way to do so is through acquiring new equipment that supports your work positioning, such as an ergonomic mouse for carpal tunnel support.

If neither rest, wrist splints, nor a changed work setup provides any positive changes, the last resort can be surgery. It is relatively simple, requires only local, anaesthetic and takes roughly 15 minutes. The surgeon will slightly increase the space in the carpal tunnel, which counteracts the irritation.

Treatment summed up:

1. Reduce the strain by relieving hand and wrist
2. Use a wrist splint
3. Surgery for worst-case scenarios

Source: NHS

Prevent congestion

How to prevent congestion

Many ailments can be caused through repetitive daily work, why it is essential to be aware of how to avoid straining muscles, tendons, and joints.

In general, you must be aware of the following conditions:

1. Varied working positions
2. Ergonomic equipment
3. Physical exercises

1 Varied working positions

The most critical factor in keeping your body healthy is to change working positions during the day. This way, you can ensure that you will experience strains over time, even though your equipment may not provide you with the best possible support.

2 Ergonomical equipment

A proper hand positioning on both keyboard and mouse is vital to the strain on your muscles, tendons, joints. All the physical aspects of your workstation directly affect your body, which is why it is essential to design your space correctly.

Specially designed equipment, such as an ergonomic mouse, can play a massive role in counteracting and avoiding physical conditions, but it is critical that you set up your workplace properly.

An adjustable keyboard does not counteract the strain of repetitive work if it is not set up according to your individual needs.

3 Physical exercises

You can improve your odds against physical strains by doing a few simple physical exercises during the day. These exercises stretch the muscles and tendons while providing a break from the many repetitive motions during the day.

As physical exercises have a tremendous effect on your health, we have made a series of videos that showcase a range of different activities. These are easy to do during the day, and some can be done at the desk. They focus on different body areas, making it possible to target your specific need section.

You can find our playlist "Be Active" on YouTube by clicking here.

Contour Design is a market leader with the reach, development, and design of ergonomic computer mice and accessories such as RollerMouse, Unimouse, Contour Mouse, and Balance Keyboard.

Contour Design, Inc. was founded in 1995 by Steve Wang and is headquartered out of Windham, New Hampshire, in the US.

In Ballerup, Denmark lies the headquarter for Contour Design Nordic, which imports and markets its products via subsidiaries in Denmark, Norway, Sweden, Finland, and the United Kingdom. Contour Design Nordic is involved in partnerships with distributors of ergonomic equipment in Germany, France, Holland, Austria, and Switzerland.

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