

Guidance for using ErgoClean training video materials



Preface

This material is intended to accompany the 20 guidance videos produced by the project ErgoClean, Cleaning ergonomics – to prevent occupational diseases and accidents.

The videos are available on the project's YouTube channel [as a playlist](#).

The videos cover the most common ergonomic and safety aspects of cleaning work. We hope that the videos and this material will facilitate on-the-job training and reduce musculoskeletal disorders, accidents at work and occupational diseases among cleaners in the future.

To accompany the videos, the project also produced 20 picture guides to be used during the on-the-job training. The picture guides are available on the project and project partners' websites.

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YouTube playlist



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Introduction

Musculoskeletal disorders, diseases, frequent sick leaves, and early retirement are common among cleaners. Cleaners most commonly report pain felt particularly in the lower back, shoulders, and neck.

Musculoskeletal disorders are injuries and disorders of the musculoskeletal system – muscles, tendons, joints, vertebrae, vertebral discs, nerves, and other tissues due to exposure to various risk factors (see Fig. 1).

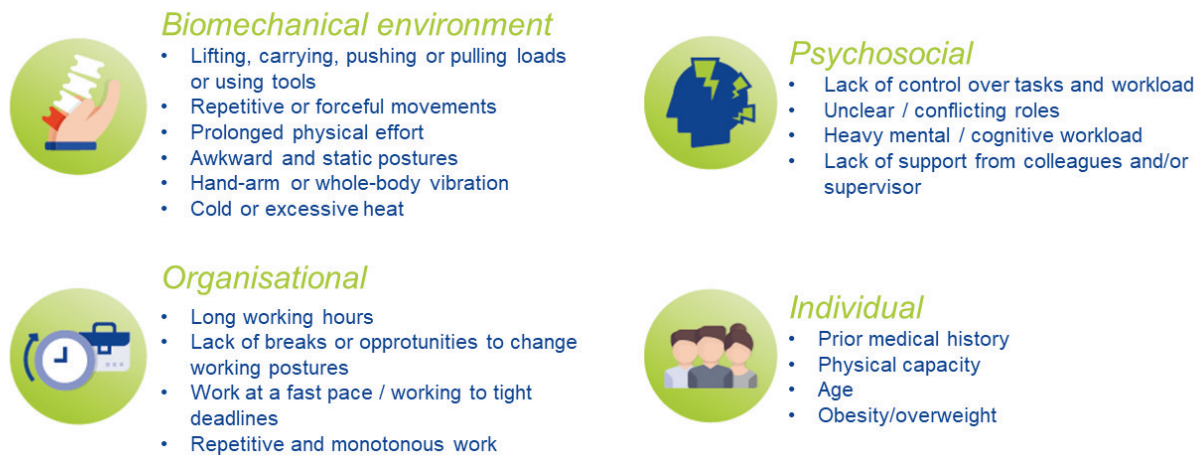


Figure 1. Factors potentially contributing to the development of work-related MSDs (European Agency, 2020)

Biomechanical factors include lifting, carrying, pushing, and pulling loads or using tools with repetitive or forceful movements, prolonged physical effort, awkward and static postures, hand, arm, or whole-body vibration, cold or excessive heat, and the work environment.

All the above can occur in cleaning.

- Repetitive work means that a cleaner needs to perform the same task for a long time with a minimum time for breaks and recovery, for example, when mopping and wiping flat surfaces for long periods.
- Force may be needed when lifting or pushing heavy loads.
- Static postures are possible e.g. when cleaning places high up.
- Awkward postures may occur when cleaners are reaching far from their body, bending, and when working with their back bent.
- Vibration may occur when using some cleaning machines.

Working postures are assessed in relation to the normal posture. The normal posture is when you stand with your arms hanging freely down and when you sit with your ankles, knees, hips, and elbows at a 90-degree angle (see Fig. 2).



Figure 2. Normal postures

Psychosocial factors, such as a lack of control over tasks and workloads, unclear or conflicting roles, heavy mental load, and a lack of support from colleagues and supervisors can cause musculoskeletal disorders.

Organisational factors include long working hours, a lack of breaks, working at a fast pace, and repetitive and monotonous work.

However, the onset of symptoms is individual and influenced by factors such as age, physical performance, health, and weight.

In Europe, one of the biggest problems is the ageing working population. The problem of an ageing workforce appears to be the discrepancy between the age-related decline in physical and mental capacity of workers, the demands of the employer and the unchanged level of professional tasks and responsibilities. Many studies show that the average physical capacity of cleaners is low. However, the physical capacity of the cleaner is important so that she/he does not get overloaded in her/his work.

It is therefore important to support the cleaners in improving their physical capacity and, on the other hand, to help them learn the most efficient and lightest ways to do their job.

Sore severe loading occurs when the person is exposed to two or more risk factors at the same time (see Fig. 3).

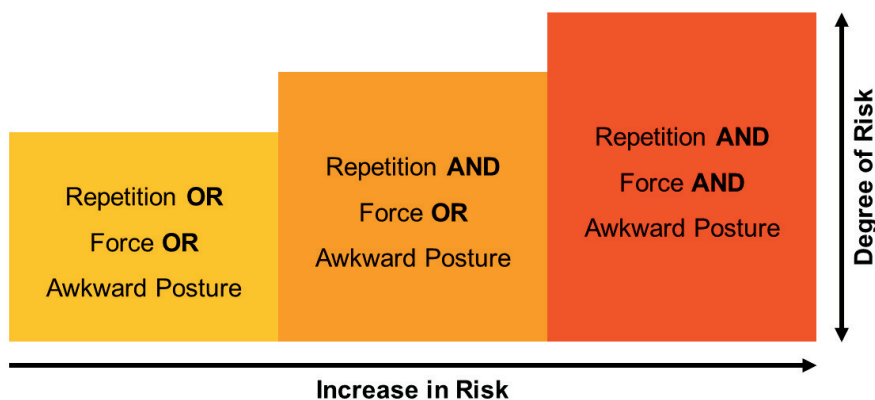


Figure 3. The risks increase if several factors are at play at the same time.

The most common accidents in the field of cleaning are falls, sprains, incisions from objects, and collisions with objects.

At the top of the occupational diseases list, there is pain in the lower back, wrists, arms, and shoulders. Also, the share of mental burden and stress has been growing from year to year.

A risk situation can be an unexpected, isolated event, such as a back injury caused by lifting a heavy load or it may take several years to develop musculoskeletal disorders, for example, due to poor working postures.

Learning and using ergonomic and safe working methods right from the beginning of your career is extremely important.

Basic ways to minimise risks:

Avoiding

- repetitive work
- reaching
- bending
- awkward postures
- static postures
- lifting heavy loads

and having

- good professional skills
- good physical condition.

Task variation is highly recommended.

It is also very important to ensure appropriate and thorough on-the-job training.

Measuring physical load

When measuring the stress and strain of cleaning work, it is important to measure cardiorespiratory and muscular work. The most common method for measuring cardiorespiratory load is to measure heart rate. Studies show that in cleaning work the average heart rate ranges from 90 to 104 beats per minute over an 8-hour work shift. This means that cleaning is physically stressful work.

Previously, working postures were usually studied by observation. Nowadays, local muscular load is often measured by a more accurate electromyography (EMG) method. EMG is a diagnostic method used to evaluate muscle and nerve activity.

Research shows that static loading and repetitive work are common in cleaning work, particularly, poor postures of the back and arms. The number of bent and twisted working postures varies from 36% to 56% during a working hour.

Guiding employees to cleaning ergonomics and safety at work

ON-THE-JOB TRAINING STEPS

On-the-job training is a collaboration between the trainer and the cleaner (Fig. 4).

When guiding the cleaner on cleaning ergonomics and work safety, the trainer's role is to motivate the cleaner, find out what the cleaner's level of basic knowledge is, teach the correct working methods, and ensure that the cleaner has understood the instructed material correctly.

The cleaner's role is to observe, ask questions, demonstrate that she/he has understood the matter correctly, practise, and put into practice what she/he has learned.

The training also includes monitoring the cleaning work at the working site to ensure that good ergonomics is applied to the cleaning work every day. If necessary, on-the-job training is repeated.

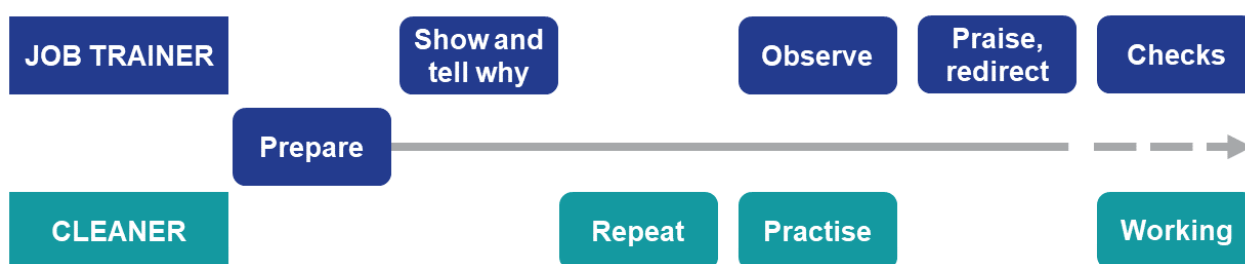


Figure 4. On-the-job training steps

Trainer activity: PREPARE
<p>Reserve a quiet time and space for on-the-job training. Describe to the cleaner which steps this guidance session will include and how it will proceed. Ask the cleaner to tell you which experience and/or training she/he has in the tasks the guidance concerns. Adjust the training based on this knowledge.</p> <p>+</p> <p>Make sure you have all the materials, chemicals, tools, and machines ready, clean and available.</p> <p>+</p> <p>Describe the task and goal:</p> <ul style="list-style-type: none"> • Each on-the-job training session begins with a clear description of the task and goals. • Goals should include a statement which defines what the cleaner should accomplish. If the cleaner knows what is expected of her/him, it is much easier to provide training as well as ensure that the cleaner knows when she/he has achieved the goals. This is also a good way to motivate the cleaner.

Trainer activity: SHOW AND TELL WHY

Varies depending on the task.

NB! There is no one right way to clean ergonomically and safely. The instructions on cleaning tools, their use, and working methods used in your country may differ from those shown in the videos. In such cases, you should follow the guidelines of your country or employer and explain why they are also recommended from an ergonomic and occupational safety point of view.

Cleaner activity: REPEAT

Varies depending on the task.

Cleaner activity: PRACTISE

The cleaner shows the ergonomically correct way to work in practice.

Trainer activity: Observe

The trainer observes the cleaner.

Trainer activity: PRAISE AND REDIRECT

Give encouraging feedback by telling the cleaner what went well.
If some work step(s) could be done more ergonomically, redirect and tell why.
Let the cleaner know how to access the training video and other instructions independently.
Plan with the cleaner when a trainer/supervisor can come to observe the work and make sure that good work ergonomics is being put into practice.

Cleaner activity: WORKING

The cleaner practises ergonomic working in daily cleaning tasks.

Trainer activity: CHECKS

The trainer/ supervisor visits the cleaner according to the plan and checks that work is performed ergonomically.

PRE-MOISTENING

Trainer activity: PREPARE

Make sure you have the pre-moistening instructions, clean mops, clean cleaning cloths, and cleaning solution ready.

Pre-moistening means preparing cleaning cloths and mops ready for use in the cleaning room so that you will not have to carry cleaning solutions in buckets to the work area.

Describe the task and the goal:

- To learn how to moisten cleaning cloths and mops to a suitable level of moisture that enables removing dirt but with a work method that does not become unnecessarily heavy.
- To learn how to apply the instructions when the number of available cleaning cloths and mops varies.

Trainer activity: SHOW AND TELL WHY

Watch the video “Pre-moistening” together.

What to pay attention to:

NO WRINGING BY HAND

When moistening cleaning cloths, you need to avoid wringing by hand.

Why?

Wringing with hands causes a lot of strain on hands, wrists, and arms (see Annex 1).

Pre-moistening cleaning cloths and mops in a cleaning room allows reducing this strain.

There are different ways to pre-moisten, follow your company's guidelines.

NB! To apply pre-moistening, you may need a lot of cleaning cloths/mops.

AVOID MANUAL WET CLEANING METHODS

Why?

Wet cleaning methods cause more strain than dry/damp/moist methods. It is important to use the lightest method which removes dirt from surfaces.

PRE-MOISTEN ACCORDING TO INSTRUCTIONS

You should have instructions on how much cleaning solution is needed for each cleaning cloth/mop and with different cleaning methods.

Guide the cleaner in the wiping and mopping methods and explain why they are used in different situations (usual dirt types) in the cleaner's work area.

Why?

The aim of cleaning is to remove dirt from surfaces. A method that is too dry or too wet may not be able to remove the dirt on the surface, which can result in surface soiling. Wet manual methods and the removal of surface soiling require the use of more physically demanding cleaning methods.

Cleaner activity: REPEAT

The cleaner explains in her/his own words:

- the goal of the training
- the ergonomic way to pre-moisten cleaning cloths and mops
- why it is so important to pre-moisten, and
- how to apply pre-moistening instructions.

Cleaner activity: PRACTISE

Trainer activity: OBSERVE

Trainer activity: PRAISE AND REDIRECT

Cleaner activity: WORKING

Trainer activity: CHECKS

S-MOPPING

Trainer activity: PREPARE

Make sure you have the mopping tool with an adjustable shaft and clean mops ready.

Describe the task and the goal:

- To learn how to remove dirt from a hard floor surface in an ergonomic way by S-mopping.

Trainer activity: SHOW AND TELL WHY

Watch the video “S-Mopping” together.

What to pay attention to:

SHAFT LENGTH

A good rule for shaft length is to adjust the shaft to chin-nose height. The shaft length is good if the upper hand holding the handle does not rise above the shoulder level when mopping.

Why?

If the shaft is too long, extra strain is put on the shoulders and arms (see Annex 2).

If the shaft is too short, extra strain is put on the shoulders, neck and back.

GRIP ON THE SHAFT

The grip of the hands on the shaft should be light, no force is needed.

Why?

If force is used in holding the mop shaft and moving the mop, the finger, hand, and arm muscles are put under unnecessary strain.

MOPPING WIDTH

A good mopping width is one where you keep your arms close to your body. Do not make wide lateral movements.

Why?

Extra strain is put on arms if the mopping width is too wide (see Annex 3).

MOPPING DIRECTION

It is possible to S-mop moving forwards or backwards.

NB! We have different kinds of recommendations in different countries. Follow the recommendations of your employer.

NB! By changing the mopping direction, you can reduce the effects of repetitive work, because mopping forwards causes strain on different muscles than mopping backwards. When mopping backwards, make sure you don't hit anything. When mopping forwards, make sure your work shoes are clean.

CHANGE THE POSITION OF THE HANDS

When mopping, it is a good idea to switch the upper hand holding the mop from time to time. This may seem difficult at first. So, encourage the cleaner to practise.

Why?

Mopping is a task that involves repetitive movement. To minimise the risks of straining the muscles, it is crucial to make the most of every opportunity to reduce one-sided strain. Changing which hand is holding the top of the mop handle during mopping enables reducing one-sided strain.

KEEPING YOUR NECK AND BACK STRAIGHT

When mopping, you should keep your neck and back straight.

Why?

Bending the head down or the back forward will strain the neck, back, and shoulders. The strain is the more severe the lower you bend your head or back (see Annex 4). It is also important to keep the mop close to your body without reaching far ahead. Reaching strains your arms and shoulders unnecessarily (see Annex 3).

NO HURRYING

The working pace should be kept normal. Do not hurry while mopping.

Why?

If the working speed is too high, mopping will be unnecessarily stressful. In a hurry, the mopping technique may fail, which results in dirt not being removed from the floor by mopping. Also, working in a hurry increases the risk of accidents.

NB! Tell the cleaner to contact the supervisor if she/he must work in a hurry so that the cause of it can be identified and the necessary steps can be taken.

REMOVING THE MOP FROM THE MOP FRAME

When removing a mop from the mop frame, avoid bending down. Bending down puts strain on the back.

Depending on the way the mop is attached to the mop frame, you can use different kinds of techniques.

Why?

Any unnecessary strain on the back should be avoided.

Cleaner activity: REPEAT

The cleaner explains in her/his own words:

- the goal of S-mopping
- the ergonomic principles of S-mopping, and
- why these principles are important.

Cleaner activity: PRACTISE

Trainer activity: OBSERVE

Trainer activity: PRAISE AND REDIRECT

Cleaner activity: WORKING

Trainer activity: CHECKS

PUSH MOPPING

Trainer activity: PREPARE

Make sure you have the mopping equipment with an adjustable shaft and clean mops ready.

Describe the task:

- Push mopping is used when cleaning rooms/spaces without any or with a small amount of furniture. Push mopping causes less strain on the body than S-mopping (see Annex 5).
- You should choose the width of the mop frame based on dirt and the size of the area to be cleaned. To remove waste and loose dirt by dry/damp mopping, you can use wider mops compared to when removing dirt that is more stuck to the floor, in which case you might need moist mopping. The amount of cleaning solution used in mops also affects workload. Usually, the more cleaning solution is used to moisten the mop, the heavier the work becomes.

Describe the goal:

- To learn how to remove dirt from a hard floor surface in an ergonomic way by push mopping.

Trainer activity: SHOW AND TELL WHY

Watch the video “Push mopping” together.

What to pay attention to:

SHAFT LENGTH

A good rule for shaft length is to adjust the shaft to about chest height.

Why?

In that position, your arms are relaxed and the workload is minimised.

FRAME WIDTH

Choose a mop frame width based on the cleaning area and mopping method.

Why?

By using the widest mop possible, you save steps and working time.

Avoid using wide mops, especially in moister/wet mopping. Mopping may get heavy, which puts a load on the arms and shoulders.

NB! The material used in mops and the mop structure affects the load.

NO HURRYING

Do not hurry, walk at a normal speed.

Why?

If the walking speed is too high, the work is unnecessarily stressful. In a hurry, cleaning the surface can also fail, preventing all the dirt from being removed from the floor.

Cleaner activity: REPEAT

Cleaner activity: PRACTISE

Trainer activity: OBSERVE

Trainer activity: PRAISE AND REDIRECT

Cleaner activity: WORKING

Trainer activity: CHECKS

CHOOSING A MACHINE INSTEAD OF MOPPING

Trainer activity: PREPARE	
<p>Have the instructions on when and where to use cleaning machines ready and available. Describe the task and the goal:</p> <ul style="list-style-type: none"> The task is to use cleaning machines according to instructions instead of using manual floor cleaning methods. 	
Trainer activity: SHOW AND TELL WHY	
<p>Watch the video “Choosing a machine instead of mopping” together.</p> <p>What to pay attention to:</p> <p>WORKLOAD S-mopping methods are more straining than cleaning with machines, especially, when there is a need to use moist or wet cleaning methods (see Annex 6). Always choose a machine for floor cleaning whenever possible.</p> <p>Why? Manual cleaning puts strain on the shoulders, back, and arms. Using an ergonomically well-designed machine enables avoiding this kind of strain.</p> <p>CLEANING RESULT The cleaning result is better when using machines. Especially when there are stains or dirt firmly attached to the surface.</p> <p>SAFETY ASPECTS The floors are safer when using a scrubber drier.</p> <p>Why? When using mop equipment in moist/wet floor cleaning, the floor will also be wet for some time and may be slippery. A scrubber drier vacuums the cleaning solution away so the floor remains safe to walk on.</p> <p>SITUATIONS WHEN CLEANING MACHINES ARE USED Present the work plan for the work area and explain how often and in which situations cleaning machines are used. If the cleaner is unfamiliar with the cleaning machines you have on the site, guide him/her on their effective, ergonomic, and safe use.</p>	
Cleaner activity: REPEAT	
Cleaner activity: PRACTISE	Trainer activity: OBSERVE
Trainer activity: PRAISE AND REDIRECT	
Cleaner activity: WORKING	
Trainer activity: CHECKS	

VACUUMING

Trainer activity: PREPARE

Make sure you have a clean vacuum cleaner ready.

Describe the task and the goal:

- To learn how to remove waste, dust, and loose dirt from textile floors in an ergonomic and safe way using a vacuum cleaner.

Trainer activity: SHOW AND TELL WHY

Watch the video “Vacuuming” together.

What to pay attention to:

CHECKING THAT THE DUST BAG IS NOT TOO FULL

Before starting to vacuum, it's good to check that the dust bag is not too full. You can also have a spare dust bag in the dust container.

Why?

You save steps and time if you can change a full dust bag to a new one at the work site, without having to go to the cleaning room.

ADJUSTING THE LENGTH OF THE HANDLE

Adjust the length of the tube handle to around shoulder level. The length is correct when you can vacuum with your arms hanging freely and relaxed.

Why?

If the tube handle is set too short, an unnecessary strain is caused on your back, neck, arms, and shoulders.

MOVEMENT WITH LEGS

When vacuuming, use your leg muscles to achieve the vacuuming motion. Avoid using arm muscles.

Why?

Leg muscles are bigger and stronger than arm muscles, so it's good to avoid loading the arm muscles (see Annex 7).

NB! Always adjust the height of the suction nozzle according to the surface material you are cleaning. If it is too low, the suction power may be too hard, so pushing and pulling the suction nozzle will require a lot of force.

AVOID BENDING

Adjust the handle position when vacuuming under furniture.

Why?

Bending or working on the knees causes a lot of strain on the back and leg muscles and causes an awkward working posture. By turning the vacuum tube handle by 180 degrees, it will be easier to reach under the furniture. Also, moving lightweight furniture out of your way makes vacuuming easier.

KEEP THE HOSE AND CABLE BEHIND YOU

For safety reasons, plan vacuuming so that you can always keep the hose and cable behind you.

Why?

In this way, you will increase safety at work by reducing the risk of tripping

DISCONNECT THE PLUG SAFELY

Always disconnect the connection cord by pulling on the plug, not the cord, and holding the socket with the other hand.

Why?

If you pull the cable, the electrical wires inside the cable can come loose and cause an electrical hazard.

Cleaner activity: REPEAT

Cleaner activity: PRACTISE

Trainer activity: OBSERVE

Trainer activity: PRAISE AND REDIRECT

Cleaner activity: WORKING

Trainer activity: CHECKS

WIPING A FLAT SURFACE

Trainer activity: PREPARE

Make sure you have clean microfibre cloths ready.

Describe the task and the goal:

- The task is to remove dirt from furniture surfaces in an ergonomic way.

Trainer activity: SHOW AND TELL WHY

Watch the video “Wiping a flat surface” together.

What to pay attention to:

FOLDING THE CLOTH

It's good to fold the microfibre cloth so that the size is around the size of your hand.

Why?

When the cloth is folded to the size of your hand, you can use the same pressure on each spot of the surface and this way monitor that the cleaning effect is good.

This also allows you to keep your hand and arm in a good and relaxed position and minimise the workload.

TAKING SUPPORT

Protect your back muscles by taking support while wiping surfaces.

Why?

Without support, the strain on the back increases which can cause pain.

NB! Moving lightweight furniture is recommended to reach surfaces more easily.

WORK MOVEMENT

The wiping movement should cause as little strain on the wrists, arms, and shoulders as possible. A forward and backward movement while working with the support of the legs reduces the workload. Avoid reaching forwards and any awkward work postures, such as twisting the wrist and arm.

In some countries, the recommendation is to wipe sideways. In that case, do not use wide movements.

Why?

Wiping surfaces is repetitive work. Awkward work postures, such as twisting the wrist, arm, and shoulder can cause muscle pain and wear and tear of the joints in the long run.

NO HURRYING

The working pace should be kept normal. Do not hurry while wiping.

Why?

If the working speed is too high, wiping will cause unnecessary strain. When you are in a hurry, there is a risk that the wiping technique, systematic approach, and thoroughness may fail.

Also, working in a hurry increases the risk of accidents.

NB! Tell the cleaner to contact the supervisor if she/he must work in a hurry so that the cause of it can be identified and the necessary steps can be taken.

USE BOTH HANDS

Learn to wipe using both hands. This may be difficult at first, so encourage the cleaner to practise this technique (see Annex 8).

Why?

Wiping is repetitive work. If you use only your right or left hand for wiping, you will cause one-sided strain on the muscles. By changing the wiping hand, the other hand will get a rest. Repeated arm movements also strain the shoulders.

Cleaner activity: REPEAT

Cleaner activity: PRACTISE

Trainer activity: OBSERVE

Trainer activity: PRAISE AND REDIRECT

Cleaner activity: WORKING

Trainer activity: CHECKS

WIPING WITH AN INTERIOR MOP

Trainer activity: PREPARE

Make sure you have clean interior mopping equipment, mops, and a cleaning cloth ready.

Trainer activity: SHOW AND TELL WHY

Watch the video “Wiping with an interior mop” together.

What to pay attention to:

NO HURRYING

The working pace should be kept normal. Do not hurry while wiping.

Why?

If the working speed is too high, wiping will cause unnecessary strain. When you are in a hurry, there is a risk that the wiping technique, systematic approach, and thoroughness may fail.

Also, working in a hurry increases the risk of accidents.

NB! Tell the cleaner to contact the supervisor if she/he must work in a hurry so that the cause of it can be identified and the necessary steps can be taken.

SHAFT LENGTH

A good length for the shaft is chin height. The shaft length is good when the upper hand holding the top of the handle does not rise above the shoulder level when wiping.

Why?

If the shaft is too long, extra strain is put on the shoulders and arms.

If the shaft is too short, extra strain is put on the shoulders, neck and back.

TOOL MOVEMENT

You can use the S-mopping technique or push the interior mop. It is recommended to push the mop while walking alongside a table. Adjust the handle to keep the upper hand below the shoulder level. In case the tool does not remove stains, you can remove them with a moist microfibre cloth.

Why?

You should work without reaching far because that will cause unnecessary strain on the back and arm muscles.

The aim is to have clean surfaces after cleaning, so it is necessary to monitor the quality of your work and use other tools if needed to achieve the agreed level of quality.

CHANGE THE POSITION OF THE HANDS

It's a good idea to switch the upper hand holding the mop handle from time to time. This may seem difficult at first, so encourage the cleaner to practise this technique.

Why?

To minimise the risks of causing strain to the muscles, it is crucial to make the most of every opportunity to reduce one-sided strain. Changing which hand is holding the top of the mop handle enables reducing one-sided strain.

See pages 6-7 for on-the-job training steps.

CLEANING VERTICAL SURFACES

Trainer activity: PREPARE

Make sure you have clean mopping equipment, mops, and a cleaning cloth ready.

Describe the task and the goal:

- To learn how to remove dirt from vertical surfaces in an ergonomic way.

Trainer activity: SHOW AND TELL WHY

Watch the video “Cleaning vertical surfaces” together.

What to pay attention to:

NO HURRYING

The working pace should be kept normal. Do not hurry while wiping.

Why?

If the working speed is too high, wiping will cause unnecessary strain. When you are in a hurry, there is a risk that the wiping technique, systematic approach, and thoroughness may fail.

Also, working in a hurry increases the risk of accidents.

NB! Tell the cleaner to contact the supervisor if she/he must work in a hurry so that the cause of it can be identified and the necessary steps can be taken.

SHAFT LENGTH

Adjust the shaft so that you can keep your shoulders in a relaxed position while wiping. Adjust the shaft to be longer when you are wiping the lower areas of the surface.

Why?

If the shaft is too long, the working distance is too big and extra strain is put on the shoulders and arms.

If the shaft is too short, extra strain is put on the shoulders, neck and back.

TOOL MOVEMENT

The aim of the tool movement is to loosen, bind and transport dirt. Adjust the handle so that you can easily reach the surface you are cleaning. Keep the mop in a horizontal position.

Keep your body faced to the surface and move your legs when wiping.

If the tool does not remove stains or other stuck dirt, you can remove them with a moist microfibre cloth.

Why?

Keep your body against the surface, because twisting postures cause strain on the back and arm joints and muscles.

The aim is to have clean surfaces after cleaning, so it is necessary to monitor the quality of your work and use other tools to reach all the surface areas to achieve the agreed level of quality.

USE BOTH HANDS

When wiping door handles, use both hands.

Why?

By doing so, you can distribute the workload evenly.

See pages 6-7 for on-the-job training steps.

WORKING AT HEIGHTS

Trainer activity: PREPARE

Make sure you have suitable cleaning equipment, such as a furniture mop, with an adjustable shaft/handle ready.

Describe the task and the goal:

- To learn how to remove dirt from high surfaces in an ergonomic and safe way.

Trainer activity: SHOW AND TELL WHY

Watch the video “Working at heights” together.

What to pay attention to:

NO STANDING ON CHAIRS, TABLES, OR OTHER UNSAFE PLATFORMS

It is not allowed to use chairs or other unstable or unsafe furniture when cleaning higher surfaces, not even for short periods.

Why?

There is always a risk of falling. It is also against the law on occupational safety.

NO REACHING HIGH, USE PROPER EQUIPMENT

When cleaning higher surfaces, use tools with adjustable shafts.

Why?

You can avoid pains in muscles and joints.

Cleaner activity: REPEAT

Cleaner activity: PRACTISE

Trainer activity: OBSERVE

Trainer activity: PRAISE AND REDIRECT

Cleaner activity: WORKING

Trainer activity: CHECKS

BENDING DOWN

Trainer activity: PREPARE	
Make sure you have the clean tools needed ready. Describe the task and the goal: <ul style="list-style-type: none">• To learn how to avoid bending and straining your back when cleaning.	
Trainer activity: SHOW AND TELL WHY	
Watch the video “Bending down” together. What to pay attention to: AVOID BENDING Avoid work positions that require you to bend forward or work on your knees. Make use of cleaning equipment with an adjustable shaft, brace for support, squat, or kneel (when kneeling you can put a towel on the floor to make the surface more comfortable for your knees). Why? Bending down is considered a bad working posture. It can strain your back, neck, shoulders, arms, and hands.	
Cleaner activity: REPEAT	
Cleaner activity: PRACTISE	Trainer activity: OBSERVE
Trainer activity: PRAISE AND REDIRECT	
Cleaner activity: WORKING	
Trainer activity: CHECKS	

USE OF CHEMICALS

Trainer activity: PREPARE

Make sure you have an all-purpose cleaner, clean dosing bottle, dosing pump/spoon/device, and dosing instructions ready.

Describe the task and the goal:

- To learn how to prepare and use cleaning solutions safely.
- To inform the cleaner where to find the instructions for dosing.

Trainer activity: SHOW AND TELL WHY

Watch the video "Use of chemicals" together.

What to pay attention to:

NEVER MIX CLEANING AGENTS

Why?

Mixing chemicals may lead to forming toxic compounds.

NB! Tell the cleaner to contact the supervisor in case she/he feels that the cleaning agents are not effective enough so that they can find other solutions.

PERSONAL PROTECTION EQUIPMENT

The safety data sheet for the cleaning agent specifies the type of personal protection used when dosing the agent. Goggles and protective gloves are often recommended.

Why?

Goggles are needed if there is a possibility of splashes (depending on the dosing system).

Gloves with sufficient protection against chemicals are needed when there is a possibility of the chemical ending up on the skin of the hands by accident.

NB! Show the cleaner the safety data sheets of cleaning agents used in the work area. Also inform the cleaner about where these are kept.

DOSING

Guide the cleaner on the correct dosing. Show dosage instructions and how to make a cleaning agent solution correctly with the dosing system you have at the work site. Use the amount of solution needed during one working day as an example.

Why?

It is not always easy to calculate how much cleaning agent is needed to prepare a cleaning solution used to moisten a certain number of cleaning cloths and mops.

The correct dosing is very important. Too low a dosage is not effective in removing dirt. Overdosing can cause many problems, like chemical films forming on surfaces, damage to surfaces, and environmental load.

DO NOT SPRAY, USE A PROPER DOSING BOTTLE

Make a cleaning agent solution in a dosing bottle which doses the solution as droplets on a cloth, not as a mist.

Why?

In a mist, the cleaning agent is in very small droplets that stay in the air for a long time. In the air we breathe, the cleaning mist can be carried into the body, irritating the respiratory system and causing illnesses.

USE PERSONAL PROTECTIVE EQUIPMENT

Depending on the cleaning agent, cleaning task, and cleaning method, use proper PPE as guided in the safety data sheet. You may need e.g. protective gloves, a face mask, or an apron.

Why?

Cleaning chemicals can have different kinds of health hazards. You need to protect yourself as guided in the safety data sheets.

Cleaner activity: REPEAT

Cleaner activity: PRACTISE

Trainer activity: OBSERVE

Trainer activity: PRAISE AND REDIRECT

Cleaner activity: WORKING

Trainer activity: CHECKS

IMPORTANCE OF PPE

Trainer activity: PREPARE

Make sure you have all the personal protection equipment needed ready in the work area.

Describe the task and the goal:

- To learn when and how to use personal protection equipment that is needed in the work area.

Trainer activity: SHOW AND TELL WHY

Watch the video “Importance of PPE” together.

What to pay attention to:

PROTECTIVE GLOVES

When cleaning, protective gloves protect the skin from chemicals, dirt, and microbes.

Tell the cleaner what kind of protective gloves must be worn in the work area and in which situations this must be done.

Reusable protective gloves are worn e.g. when dosing cleaning agents and in toilet cleaning. They are suitable for long-lasting use, and they offer better chemical protection compared to disposable gloves.

The safety data sheet provides information on which kind of protective gloves must be used when handling the cleaning agent, e.g. that the gloves are tested according to standard EN 374. Show the cleaner the proof that the gloves she/he is advised to use fulfil the requirements.

Reusable gloves are always personal, and the cleaner should have more than one pair for each working day. If moisture gets on the inside of the gloves, they must be replaced because wetness can be harmful to the skin. Reusable gloves need to be thoroughly washed from the outside and inside after every use and let dry completely before the next use. Make sure that the cleaner knows how to do that.

Disposable protective gloves are intended for short-term use, e.g. in situations when there is a need to prevent cross-contamination. Disposable gloves must be thrown in the trash after each task.

The material of both reusable and disposable gloves can be, e.g. latex or nitrile. Note, that some people may be allergic to latex.

After removing gloves, clean your hands. Different countries have different recommendations on how to do that, either washing the hands with soap and water or using hand sanitiser. Follow the recommendations of your employer.

APRON

Tell the cleaner in which situations and what kind of an apron must be used in the work area. If a reusable apron is used, advise the cleaner how to clean it after use.

You may need an apron to protect your workwear in situations when you need to use wet methods, like when washing showers, or when there is a risk of (microbial) dirt or splashes on the clothing, for example, when cleaning toilets during an epidemic.

HEARING PROTECTION

Tell the cleaner in which situations and what kind of hearing protection must be used in the work area. Also advise the cleaner on how to clean the protector.

Hearing protection is mandatory if the noise level exceeds 85 dB. But of course, you can use a hearing protector whenever your ears are hurting from noise.

HEAD PROTECTION

Using a helmet when cleaning is often mandatory at warehouses, industrial sites, and the construction industry. The main principle is that the cleaner wears the same personal protection equipment as other workers at the site.

Tell the cleaner in which situations and what kind of head protection must be used in the work area.

ATTENTION VEST

Using an attention vest when cleaning is often mandatory at warehouses, industrial sites, and the construction industry. The main principle is that the cleaner wears the same personal protection equipment as other workers at the site.

Tell the cleaner in which situations an attention vest must be used in the work area.

FACE SHIELD AND GOGGLES

Face shields and goggles are used when there is a need to protect your face or eyes from dust, particles, droplets, or chemicals.

Goggles are usually also used when preparing cleaning solutions.

Tell the cleaner in which situations and what kind of face and eye protectors must be used in the work area, and how they are cleaned after use.

MASKS AND OTHER RESPIRATORS

Respirators are used when cleaning very dusty places or when there is hazardous dust or aerosols in the indoor air. There are several types of respiratory protection equipment depending on the type of dust or aerosols you need to protect yourself from.

Tell the cleaner in which situations and what kind of respirators must be used in the work area.

Cleaner activity: REPEAT

Cleaner activity: PRACTISE

Trainer activity: OBSERVE

Trainer activity: PRAISE AND REDIRECT

Cleaner activity: WORKING

Trainer activity: CHECKS

PROPER WORKING SHOES AND CLOTHES

Trainer activity: PREPARE	
Describe the task and the goal: <ul style="list-style-type: none">• To learn the importance of wearing proper working shoes and clothes.	
Trainer activity: SHOW AND TELL WHY	
Watch the video “Proper working shoes and clothes” together.	
What to pay attention to:	
WORKWEAR Describe the criteria for cleaners’ workwear. Usually, the workwear is based on criteria such as comfort, flexibility, fit, suitability for warm or cool conditions, durability, cleanability, and the image the employer wants to convey to customers about the organisation. Tell the cleaner how important it is to wear only clean working clothes on the work site and how the washing of working clothes is organised.	
WORK SHOES As cleaners are on their feet for most of the working day, it is very important that they wear proper working shoes. This will help to reduce the strain on the muscles and prevent the harm caused by poor leg postures. Proper work shoes are: <ul style="list-style-type: none">• supportive with a flexible and non-slip sole• liquid proof• with low heels• easy to clean• provide protection against moisture, slipping, or other demands of work. Special safety footwear, e.g. with toe and heel protection, is needed at production facilities, factories, and building sites. Tell the cleaner what kind of demands there are for work shoes in the work area.	
Cleaner activity: REPEAT	
Cleaner activity: PRACTISE	Trainer activity: OBSERVE
Trainer activity: PRAISE AND REDIRECT	
Cleaner activity: WORKING	
Trainer activity: CHECKS	

LIFTING LOADS

Trainer activity: PREPARE

Make sure you have something heavy to lift and possible aids to move heavy loads ready. Describe the task and the goal:

- To learn how to lift or move heavy loads ergonomically and safely.

Trainer activity: SHOW AND TELL WHY

Watch the video “Lifting loads” together.

What to pay attention to:

CLOSE TO BODY

Stand close to the object you are going to lift. Place your feet shoulder-width apart, with one foot slightly in front of the other. Make sure that the load/package you are lifting is secure.

Why?

If you are far from the load, your muscles are put under unnecessary strain. The position of the feet increases balance.

BACK STRAIGHT

Squat, secure the load and lift by straightening your knees and legs. Do not lift with your back. Engage your core muscles as you straighten your legs. Keep your head, shoulders and back straight when lifting.

Lift the load to your waist height.

Why?

Lifting with the back is hazardous to your back.

AVOID TWISTING

Never twist your torso while lifting.

Why?

If you twist your body while lifting, your back can be damaged after just one lift.

KEEP SMOOTH

Lift smoothly. Do not make a quick lifting movement.

Why?

Quick movements can cause instant injuries.

AVOID CARRYING

Avoid carrying loads, use carriages or other equipment that helps you move loads.

Why?

Pulling loads causes less strain than lifting them.

See pages 6-7 for on-the-job training steps.

TAKING MICROBREAKS

Trainer activity: PREPARE

Describe the task and the goal:

- To learn the importance of taking microbreaks and recovery time during the workday.
- To learn what microbreaks mean in practice.
- To train how to stretch your muscles.

Trainer activity: SHOW AND TELL WHY

Watch the video “Taking microbreaks” together.

What to pay attention to:

PERFORM COUNTER-MOVEMENTS

Cleaning involves repetitive work. By taking microbreaks, you can reduce the strain of repetitive work and static postures.

Microbreaks are frequent but brief pauses from tasks that use the same group of muscles. Taking a break every 20–30 minutes lasting for 30–60 seconds or even shorter is recommended. During the break, you can stretch the muscles that have been under stress while cleaning or perform counter-movements. The idea is to ease the muscle strain and let the muscles rest.

Cleaner activity: REPEAT

Cleaner activity: PRACTISE

Trainer activity: OBSERVE

Trainer activity: PRAISE AND REDIRECT

Cleaner activity: WORKING

Trainer activity: CHECKS

WELL-ORGANISED CLEANING TROLLEY

Trainer activity: PREPARE

Make sure you have the tools and detergents that are needed during the working day ready. Describe the task and the goal:

- To learn what a well-organised cleaning trolley means and what are its benefits.

Trainer activity: SHOW AND TELL WHY

Watch the video “Well-organised cleaning trolley” together.

What to pay attention to:

TOOLS, LIQUIDS AND OTHER SUPPLIES NEEDED DURING A WORKING DAY

Stock up your cleaning trolley with all the supplies you will need during the working day. You can draw up a list of these supplies to help you.

Why?

It makes work easier if you don't have to go to the cleaning room in the middle of the day to get missing supplies.

PLACEMENT OF SUPPLIES

Place the tools, cleaning cloths, and other supplies you often need on the top shelf of the trolley.

Why?

It is more ergonomic if you don't need to bend down when picking up tools from the trolley.

KEEPING THE TROLLEY CLEAN

The last task of the working day is to clean the cleaning equipment and the cleaning trolley.

Why?

It is much nicer to start a new working day when the trolley is clean.

Cleaner activity: REPEAT

Cleaner activity: PRACTISE

Trainer activity: OBSERVE

Trainer activity: PRAISE AND REDIRECT

Cleaner activity: WORKING

Trainer activity: CHECKS

Guidance for trainers and supervisors

OBSTACLES CAUSING AWKWARD WORKING POSITIONS

GOAL

To learn how to encourage the cleaner to provide information about any obstacles hindering cleaning work and good ergonomics.

WHAT TO PAY ATTENTION TO AND WHY

Watch the video “Obstacles causing awkward working positions”.

What to pay attention to:

IDENTIFYING DIFFERENT KINDS OF OBSTACLES

Cleaning and related ergonomics may not have been taken into account in the design of buildings and premises. This can lead to awkward work postures or static workloads in cleaning and also cause psychosocial stress.

A cleaner works at many spaces every day, having no control over the ergonomics of the working environment. However, the working environment has significant effects on the ergonomics of cleaning work.

There may be a lot of objects on tables and floors that prevent efficient cleaning or lead to awkward working positions. These can be, e.g. cables and boxes on floors or personal items and cables on tables. Obstacles can also include large amounts and poorly positioned furniture, poorly chosen flooring materials and the wear and tear caused to them.

Obstacles slow down the cleaning process and therefore create hassle, which can cause stress.

THE PROCEDURE FOR REPORTING OBSTACLES TO WORK

A responsible employer works to reduce obstacles causing awkward working positions. It is important that the cleaner reports any obstacles that hinder his or her work or impair ergonomics.

Provide advice to the cleaner on the company’s procedure for reporting obstacles to work.

KNOWLEDGE INCLUDED IN THE WORK

GOAL
To stress how important it is for the cleaner to know what his/her tasks include.
WHAT TO PAY ATTENTION TO AND WHY
Watch the video “Knowledge included in the work”. What to pay attention to: THE SERVICE DESCRIPTION It is essential that the cleaner knows what has been agreed with the client about the content and quality of the cleaning service. Why? A lack of information about the content of the service description can be considered a psychosocial risk factor. If the job description is not clear, the cleaner might clean more or perform other service tasks more extensively than agreed with the customer, which leads to hurry, time pressure, and work-related stress. A lack of knowledge about the service description can also lead to a situation where the cleaner does less than expected. This causes customer dissatisfaction and complaints, which cause needless psychosocial stress to the cleaner.

CO-OPERATION WITH THE CUSTOMER

GOAL
To stress how important it is to inform the customers using the facilities about the content of the service contract.
WHAT TO PAY ATTENTION TO AND WHY
Watch the video “Co-operation with the customer”. What to pay attention to: TABLE OF RESPONSIBILITIES A table of responsibilities for cleaning tasks should be drawn up together with the client. The table of responsibilities and the service description should be communicated to all users of the premises. It is also important to show the cleaner how the service description and contract have been communicated to the customers. Why? Cleaners may get unreasonable feedback from the users of the facilities because the service description is unclear to them. This may cause unnecessary stress and discomfort for the cleaner.

THE IMPORTANCE OF GUIDANCE BY THE SUPERVISOR

GOAL

To stress the importance of on-the-job training, starting on the first day of work, and provide the cleaner with continuous and regular support.

PLAN, GUIDE AND BE PRESENT

Watch the video “The importance of guidance by the supervisor”.

What to pay attention to:

PLAN THE ON-THE-JOB TRAINING

RESERVE ENOUGH TIME FOR THE ON-THE-JOB TRAINING

GUIDE THE EMPLOYEE ON THE USE AND SAFETY OF CLEANING PRODUCTS

GUIDE THE EMPLOYEE ON THE USE AND ERGONOMICS OF CLEANING TOOLS

GUIDE THE EMPLOYEE ON THE WORK AREA AND TASKS

VISIT AND CONTACT THE CLEANER REGULARLY

Why?

To avoid psychosocial stress, the cleaner needs good guidance on cleaning agents, tools, ergonomics, safety aspects, work tasks, and the work area.

The supervisor's regular personal contacts can contribute to reducing the burden experienced at work.

Provide regular feedback on areas for improvement as well as progress.

Feedback is necessary even if everything is fine and there are no complaints. It increases the motivation of the cleaners and also has a good mental effect.

Annexes

What information do the annexes provide on workloads?

During the ErgoClean project, Smart-Wear measurements were carried out to investigate the workload of different cleaning methods.

The measurements were performed with the technology of Myontec, a Finnish company. Motion sensors integrated into a smart shirt and shorts were used to measure the strain on the arms, shoulder area, and thigh muscles, the number of muscle microbreaks during the muscle work, and the elevated positions of the upper arms. It should be noted that not all muscle groups were measured with smart wear; the strain on the back, for example, was not measured.

The following annexes present the results of these studies visually.

Below is information on how you can interpret the visualisations.

MUSCLE LOAD

The results of the smart wear measurements of muscle strain are expressed as a percentage of the muscle's maximum capacity (Figure 5). The results were analyzed and compared with the results of the Lund University study, which shows that the risk of musculoskeletal disorders increases when the percentage of muscle tension exceeds 10% for more than half of the daily working time or when it exceeds 30% for more than 10% of the working time (Anvidsson et al., 2017).

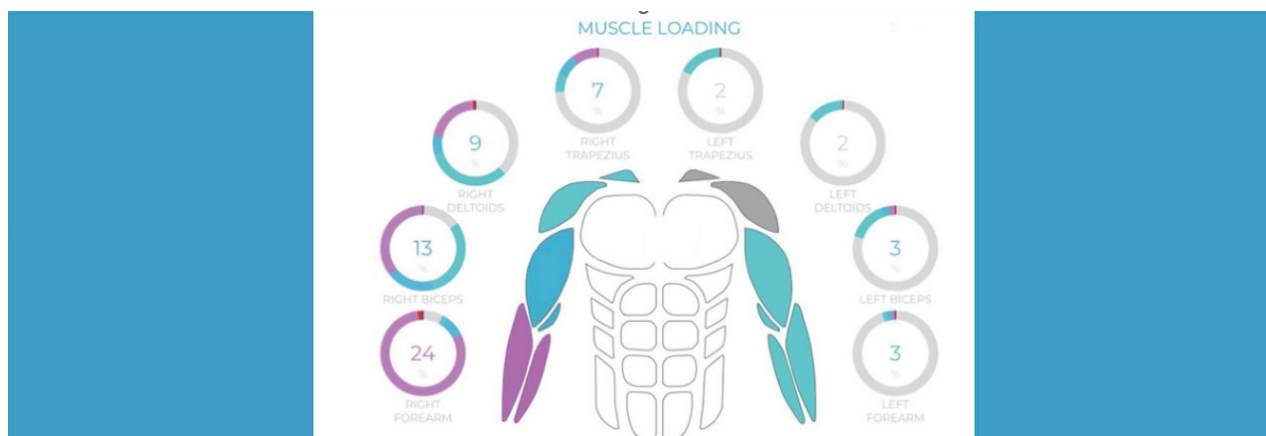


Figure 5. A visualisation showing the muscle strain on the forearms, upper arms, deltoids, abs shoulders as a percentage of the maximum capacity of the muscles.

If the colour of a muscle is shown in red, there is a possibility that the workload is too high which can cause muscle soreness as the strain continues.

The figures in the annexes also show the percentages in a shaded oval background. The percentages represent the total strain on the muscles of the upper limbs. The higher the number, the more physically demanding the work is.

NUMBER OF MUSCLE MICROBREAKS

The number of muscle microbreaks provides an idea of how much work the muscle is doing statically and dynamically (Figure 6). To avoid unnecessary strain on the muscle, muscle microbreaks should account for more than 5% of the working time.

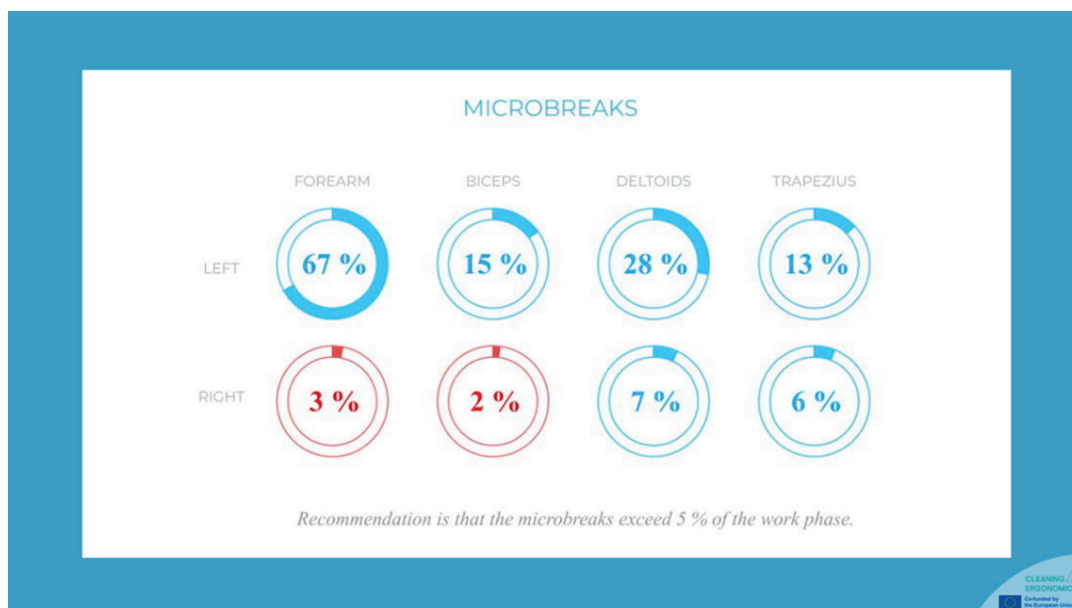


Figure 6. For the muscle workload, it is optimal to have muscle microbreaks during more than 5% of the total work time.

SHOULDER ELEVATION

Shoulder elevation should not exceed 30 degrees. The risk of musculoskeletal disorders increases if you work more than half the time with your shoulders raised for more than 30 degrees and with your arms unsupported. Shoulder elevation of more than 60 degrees should not occur for more than 10% of the total working hours.

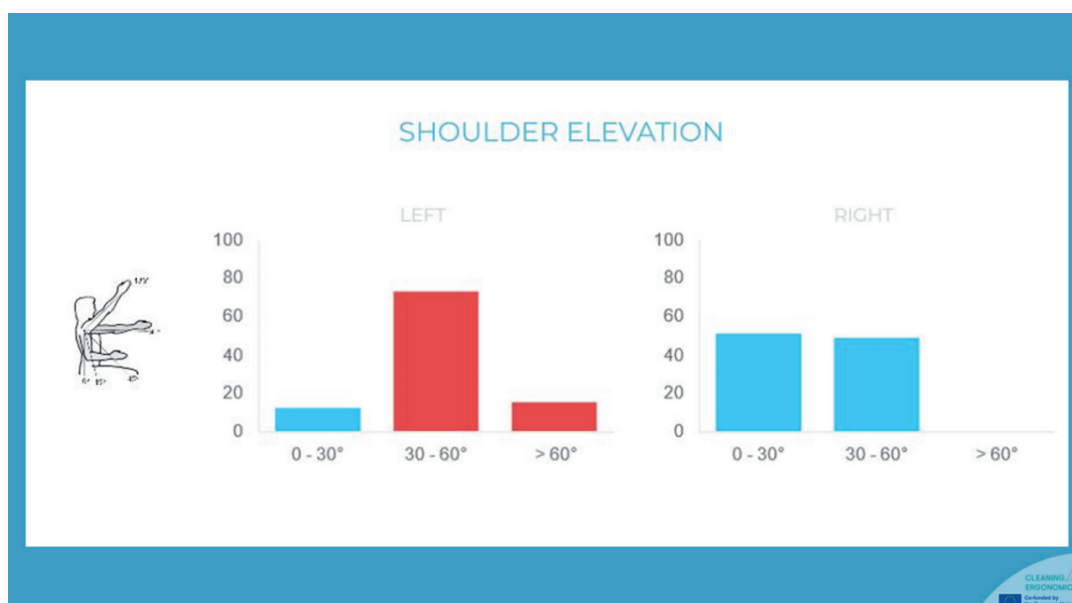
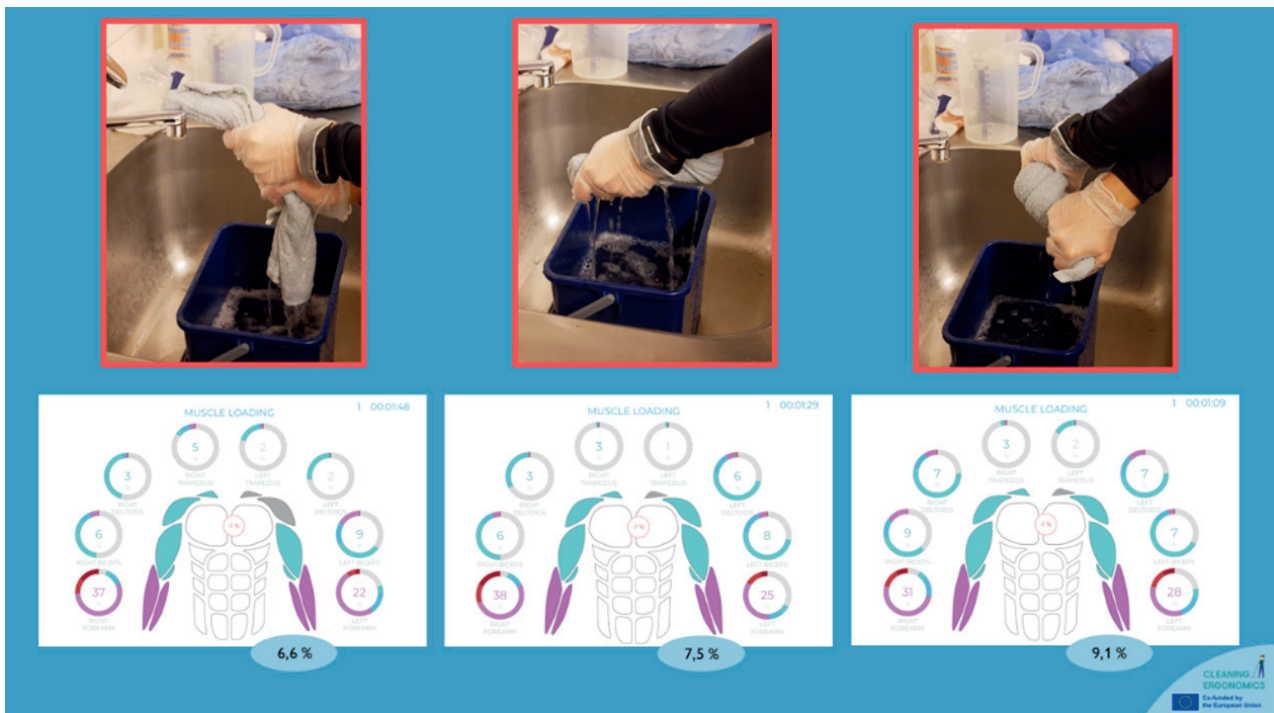


Figure 7. A visualisation illustrating the number of elevated shoulder positions.

ANNEX 1 WRINGING CLEANING CLOTHS

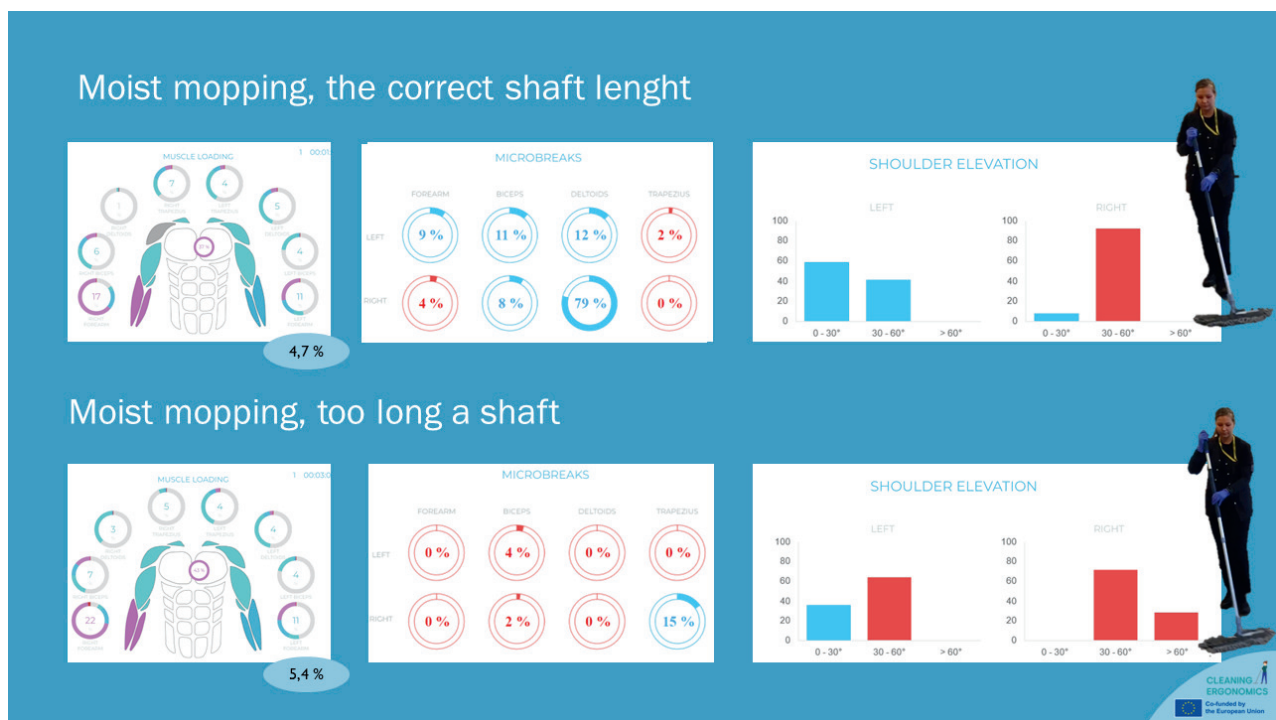


The risk of musculoskeletal disorders increases if the percentage of muscle strain exceeds 10% for more than half of the daily working hours or if it exceeds 30% for more than 10% of the total working hours.

Wringing cleaning cloths strains arms, hands, and fingers, regardless of the technique. The muscle load of the forearm exceeds 30% in each technique. Twisting the cleaning cloths should be avoided.

The percentages in the shaded oval area represent the total strain on the muscles of the upper limbs. The higher the number, the more demanding the work method.

ANNEX 2 SHAFT LENGTH



The pictures on the left show that the forearm is strained by over 10% in moist mopping but the percentage is even higher when mopping with an excessively long shaft. The arm that is holding the top of the shaft is exposed to the strain.

The percentages in the shaded oval area represent the total load on the muscles of the upper limbs. They also show a higher workload when working an excessively long handle.

Pictures in the middle show how much rest different muscles get. That indicates if the muscles are working dynamically or statically when mopping. As we can see, the muscle microbreaks are limited when working with an excessively long shaft. To avoid unnecessary strain on the muscle, muscle microbreaks should account for more than 5% of the working time.

Pictures on the right show the amount of shoulder elevation. Shoulder elevation should not exceed 30 degrees. The risk of musculoskeletal disorders increases if you work more than half the time with your shoulders raised for more than 30 degrees and with your arms unsupported.

Shoulder elevation of more than 60 degrees should not occur for more than 10% of the total working hours. The picture of mopping with an excessively long shaft indicates that the shoulder elevation can be over 60°.

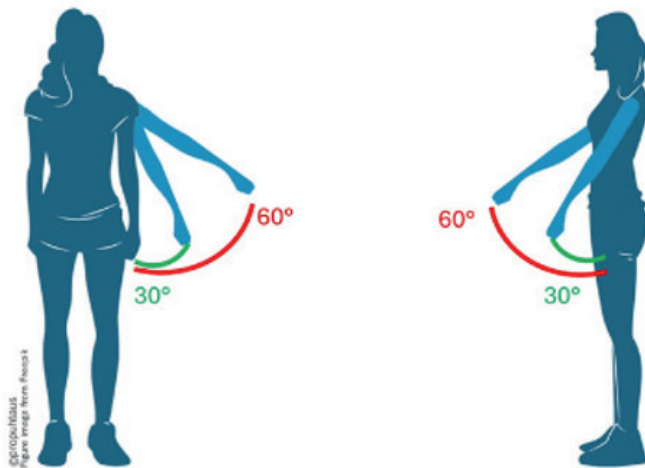
So, it is highly recommended to adjust the shaft correctly and switch the upper hand regularly.

ANNEX 3 MOPPING WIDTH



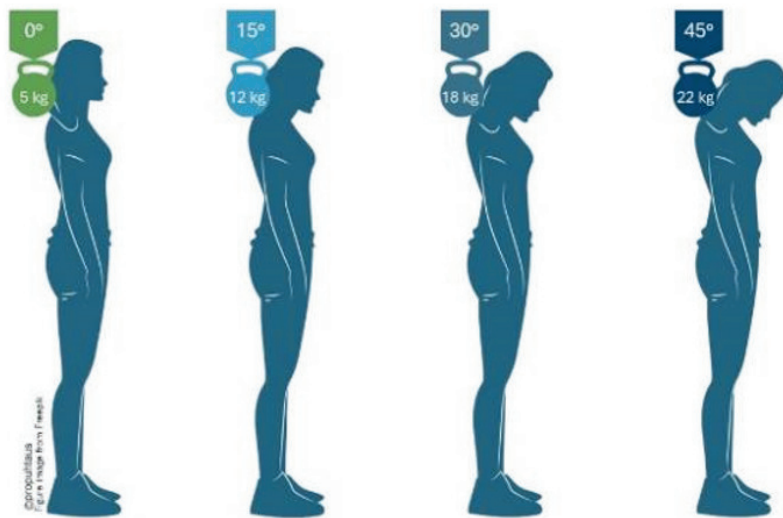
When an excessively wide movement is used in damp mopping, the situation is the same as with mopping with too long a shaft.

Retaining a narrow mopping width is therefore highly recommended.



Arms should be kept close to the body when cleaning. Wide lateral movements and reaching forwards or backwards should be avoided in all cleaning methods.

ANNEX 4 POSITION OF THE HEAD



The human head weighs about 5 kg. The load on the neck increases with increasing forward bending of the head.

When cleaning, pay attention to the position of the head.

ANNEX 5 MOPPING METHODS



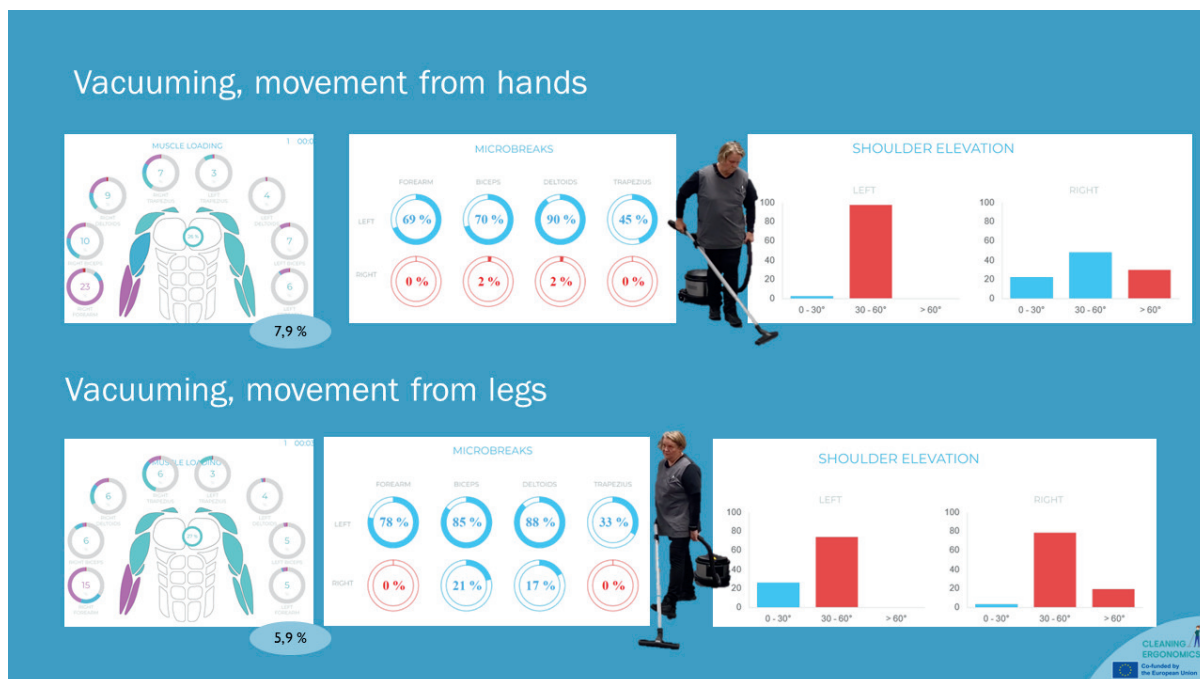
The pictures show that push-mopping causes less strain than S-mopping. You should therefore choose push-mopping when cleaning open spaces if the method is suitable for removing dirt from the floor.

ANNEX 6 MACHINE VS. MANUAL METHODS



The pictures show that choosing a cleaning machine is a good alternative to even damp mopping, which is used when dirt is easy to remove. The benefits of using cleaning machines increase even more when moist or wet methods are required to remove dirt from floors. Moist and wet mopping is more straining than damp mopping.

ANNEX 7 VACUUMING



The pictures show that less muscle strain occurs when using the feet to create the vacuuming movement. The cleaner was unfamiliar with supporting the vacuuming movement with the legs. The image at the bottom right shows that more training is needed to reduce the strain on the shoulders.

ANNEX 8 WIPING TECHNIQUE

Wiping a table, movement by using only hands



Wet wiping, both hands, back and forwards, with support

4,3 %



Wet wiping, right hand, wiping sideways, no support

5,2 %



Wet wiping, right hand, back and forwards too far, no support

5,4 %



Wet wiping, left hand, wiping sideways, no support

5,5 %



These pictures show the combined average strain on the muscles of the hands when wiping a table surface in different ways.

Using both hands, bracing for support, and performing a forwards-backwards movement allows keeping the strain at a minimum level.

The strain increases if only one hand is used, the cleaner does not brace for support or wipes sideways.

The picture on the right shows a situation in which the cleaner was unfamiliar with the technique of using the left hand for wiping. It is good to keep in mind that practice is always needed when a new tool, method, or technique is put into use.

GOOD IDEAS

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CLEANING ERGONOMICS

An illustration of a person with brown hair, wearing a green long-sleeved shirt and blue pants, holding a long-handled cleaning tool (like a mop or squeegee) and standing on a horizontal line.

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