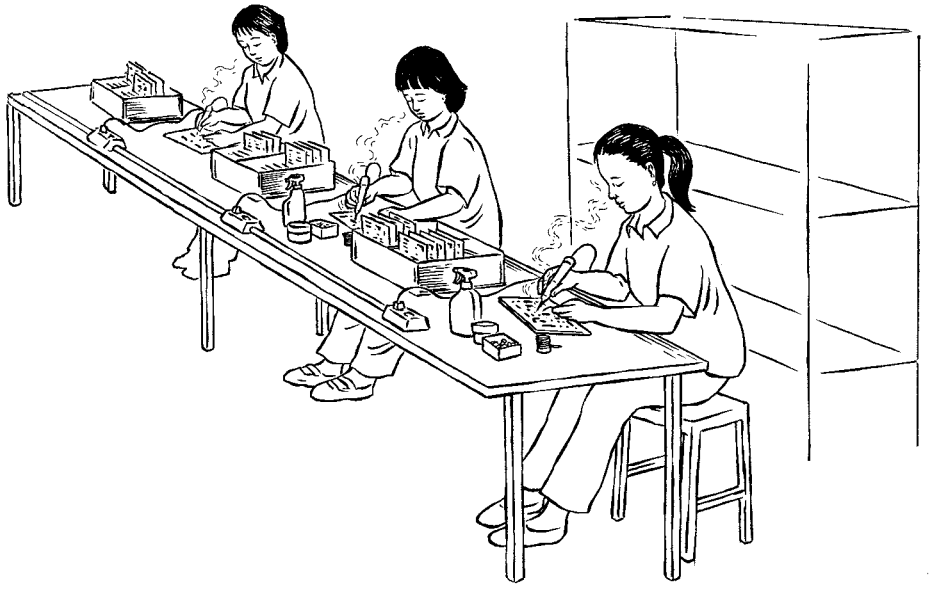
Strain and overuse injuries

Do workers have body aches at the end of the work shift?
Which work tasks make workers' shoulders sore?
Have workers been hurt while lifting heavy things?

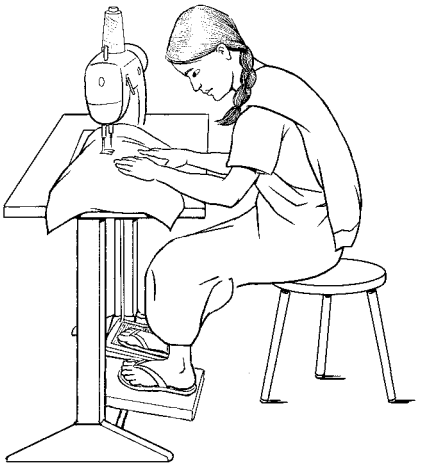
Jobs that look easy can hurt

People often think making shoes, clothes, auto parts, toys, or electronics is not dangerous because these jobs look easy. Many factory workers sit down or stand in one place all day. Their jobs rarely make them sweat or breathe hard. And most workers in export factories are young women. They do not look strong enough to do hard or dangerous work.

But many factory workers use the small muscles of their arms, hands, fingers, and eyes to make the same movements hundreds or thousands of times each day. They often sit bent over their work for many hours. At the end of the day, their eyes and muscles are strained by constant overuse, and their bodies are stiff and cramped from staying so long in the same position.



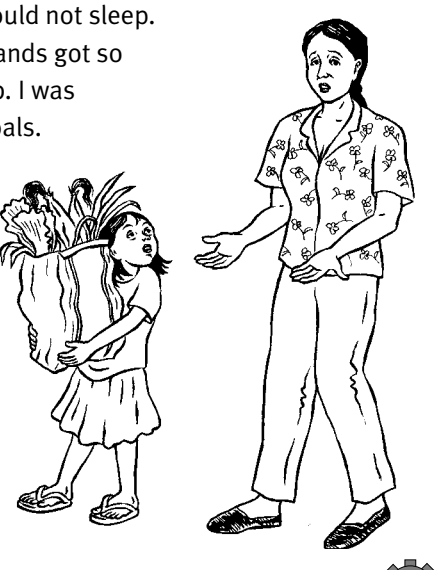
Factory workers are often forced to keep working hard even when they are tired, uncomfortable, or in pain. Overwork and strain can injure any part of the body that moves –even a finger. Factory jobs often cause this type of injury to workers' hands, arms, neck, shoulders, back, hips, knees, and legs.



Work may be harmful even if it does not cause any pain right away. When an injury becomes serious, the worker may feel pain, numbness, weakness, or tingling. Usually, you cannot see these injuries. Sometimes there may be some swelling, but you can be in great pain and not have any other sign of injury.

Juanita's story — Mexico

I was a sewing machine operator in a garment factory for 5 years. After about 1 year, my wrists and arms began to ache and tingle at night. As long as I could still work, I did not worry. But after awhile, the pain got so bad I could not sleep. I started dropping things all the time. Finally, my hands got so weak and hurt so much I could no longer do my job. I was fired six months ago for not meeting production goals.

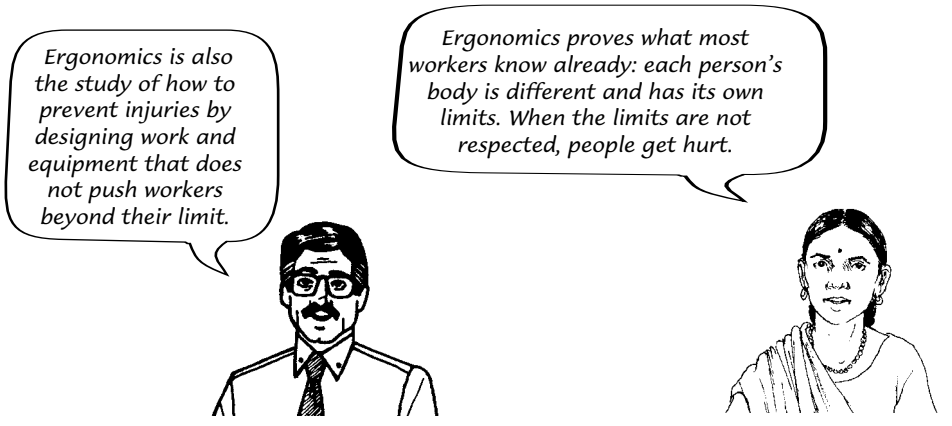


My hands do not look injured, but they still hurt a lot. I cannot hold anything heavier than a cup of tea. I can barely pull a comb through my hair. I cannot prepare meals, wash the pots, or carry a jug of water. My sister and the children have to do almost everything.

I hope my hands will get better, but I do not know what to do to stop the pain.

Ergonomics

Injuries caused by strain and overuse are also called **ergonomic injuries.** The study of what a job does to the muscles, joints, tendons, and other soft parts of the body is called "ergonomics."

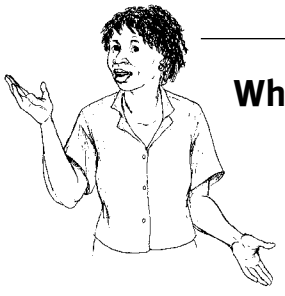


Ergonomic dangers

The working conditions that force workers to strain and overuse their bodies are also called **ergonomic dangers.** Many job tasks are easy and harmless if you only do them a few times at a comfortable pace. But the same tasks can be dangerous when you:

- **repeat the same movement** over and over again
- work in an **uncomfortable position**
- stay in the **same position** for a long time
- use **too much force** with any part of the body
- feel **pressure** on any part of the body from a hard object, such as a tool handle or table edge
- feel **vibration** from a tool, machine, or vehicle
- work in a place that is very **hot** or very **cold**

All of these dangers are made worse by working for long hours without rest.



What do you think?

Why do some workers deny their work causes pain?

Why do some workers accept pain as a normal part of work?

Moving a small bag of rice once from one table to another without bending is easy, but doing this many times every day can cause strain.

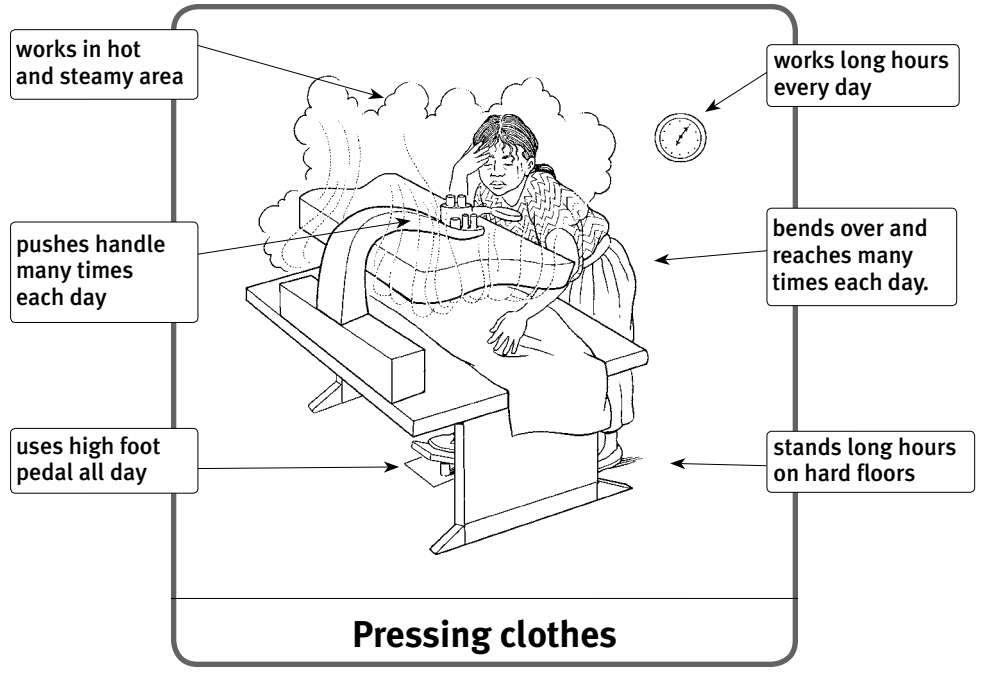
Picking up the same bag from the floor to the table requires bending, reaching, and lifting. Doing this causes more strain than moving the bag from one table to another table.

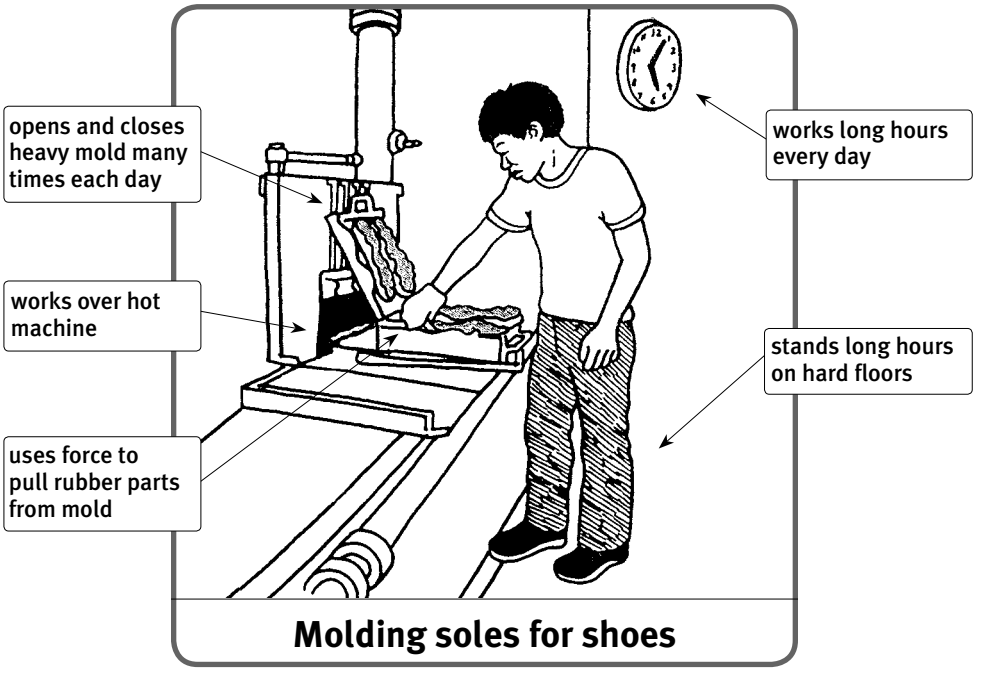
Placing the same bag on a high shelf from the table requires lifting the bag with one hand and stretching the whole body. This also causes more strain.

Placing the same bag in a box on top of the table causes more strain than moving the bag from one table to another at the same height. This work is more dangerous when you must keep up with a machine.

Learning to see ergonomic dangers

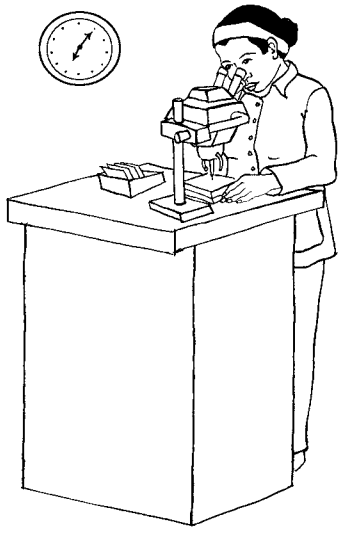
The ergonomic dangers faced by each worker depend on her job tasks and the general working conditions in her factory. Most workers face more than one danger.



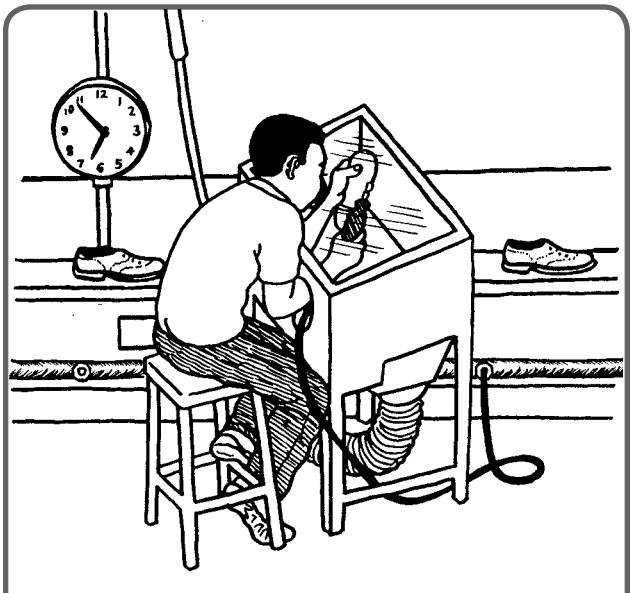


Which ergonomic dangers can you find in these pictures?

Which of these dangers do you and your co-workers face?



Inspecting circuit boards

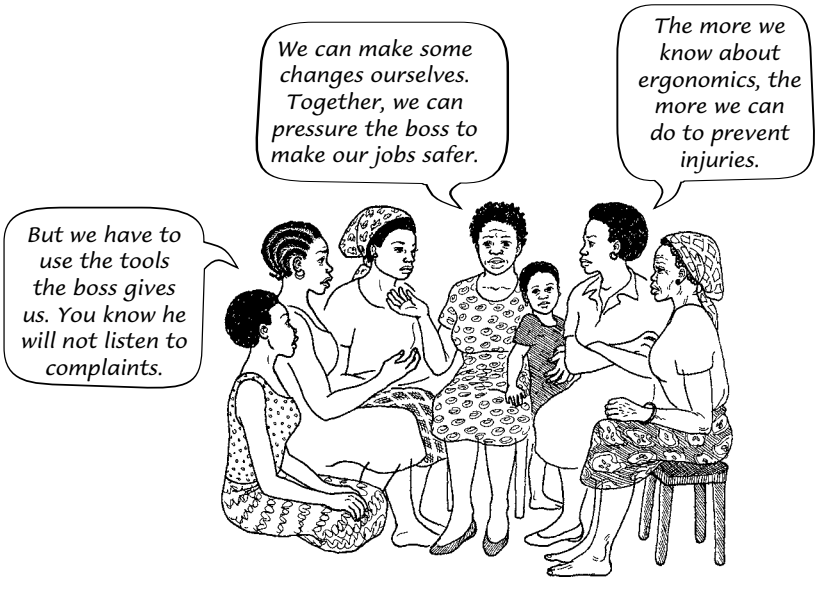


Grinding shoe soles

Preventing injuries by making jobs fit workers

Most strain and overuse injuries can be prevented if every worker

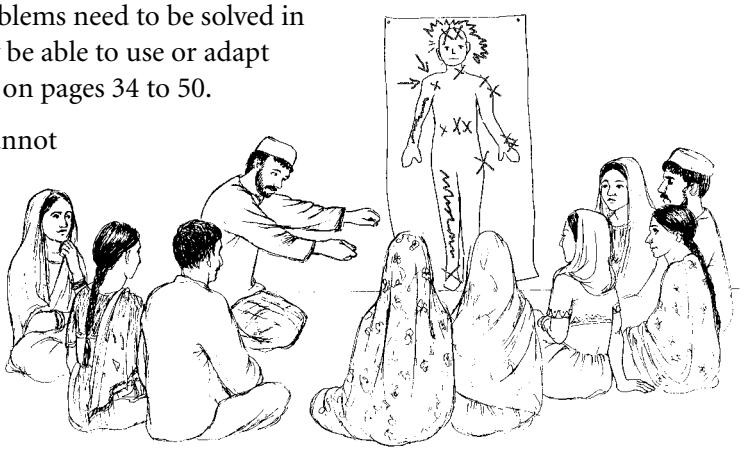
- has the **right equipment and tools** for her job
- uses **tools and equipment that fit** her body size and weight
- **is not forced to work** beyond the body's limits



Learning how job tasks strain your body

There are many ways to make jobs safer. The first step is learning which tasks may be causing injuries. You and your coworkers can use the **body map activity** on page xx and the **survey activity** on the next page to find out how your work may be hurting you. These activities will help you know which ergonomic problems need to be solved in your factory. You may be able to use or adapt some of the solutions on pages 34 to 50.

But most problems cannot be solved unless workers organize and gain power to bargain with the boss to make the factory safer.



ACTIVITY

Strain and overuse survey

A survey like this can be used in many ways. One way is to take turns asking and answering questions with a partner. If you can, do the survey while you watch each other work. One of you may see problems that the other person is not aware of.

You and your coworkers may decide to use the survey in other ways. You may want to ask other questions to find out more about each danger. For example, when a person answers "yes" to a question, ask her to describe what she feels or what she does. Compare your answers with co-workers in a group. This will help everyone see dangers that are shared and dangers that only affect workers doing certain job tasks.

For more ideas about using surveys, see 'Talk with your co-workers' on pages xx to xx.

Does your job cause strain and overuse?

Do you have **pain, tingling, or numbness** in your body that you think is caused by work?

Do you **repeat the same movement** over and over again?

Do you work in **uncomfortable positions**, such as twisting, bending, or stretching your back, arms, or neck?

Do you stay in the **same position for a long time** while you work?

Do you **lift or carry** heavy loads?

Do you work with tools or equipment that **vibrate**?

Do you **use a lot of force** with your fingers, hands, or arms to pinch, push, pull, or manipulate tools, materials or equipment?

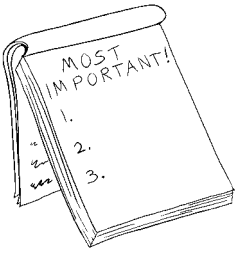
Do you use or lean on furniture, equipment, or tools with **hard edges** that press into your fingers, hands, arms, hips, or other parts of your body?

Do you work in a **very cold or very hot** area?

Does your work area have **poor or harsh lighting?**

Does your work cause strain or pain in any other way?

Which of these dangers would you like to eliminate first?



Preventing injuries with workplace changes

The next step to reducing ergonomic dangers is learning how job tasks, tools, and equipment can be changed so they do not cause harm. On pages xx to xx, we show examples of workplace changes that can prevent strain and overuse injuries.

There are too many types of factory jobs and equipment to show all the dangers of each job. You may be able to adapt the solutions shown in this book and also think of new ideas to fit the jobs in your factory.

ORGANIZING FOR ERGONOMIC SAFETY

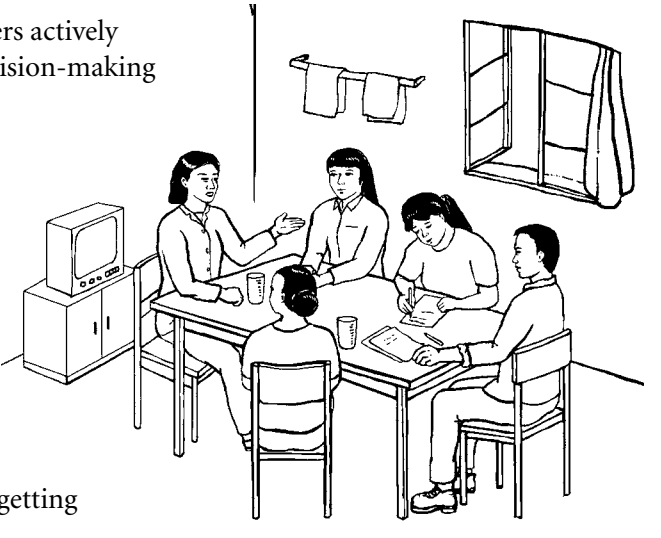
Jobs are safer when the work processes, equipment, and tools are designed with the needs of the factory workers in mind. But the people who set up a factory usually think about the fastest and least expensive way to make a product. When they arrange the work space and supply the tools, they often do not put the workers' health and safety first. As a result, they create factory jobs that cause pain, injury, and disability.

But this is not the only way to run a factory. Job tasks and workstations can be arranged so workers can do their jobs as safely as possible. Most of the time, you will need a strong, united union to get the boss to buy new tools or change the way the work is done. The stories on pages xx and xx tell how unionized workers in 2 factories won safer equipment.

Workers can reduce some ergonomic dangers themselves. Kyoung's story on page xx tells how 3 garment workers made simple changes that reduced strain and pain caused by their jobs. The activities on pages xx and xx show how you can make chairs and carts that cause less strain.

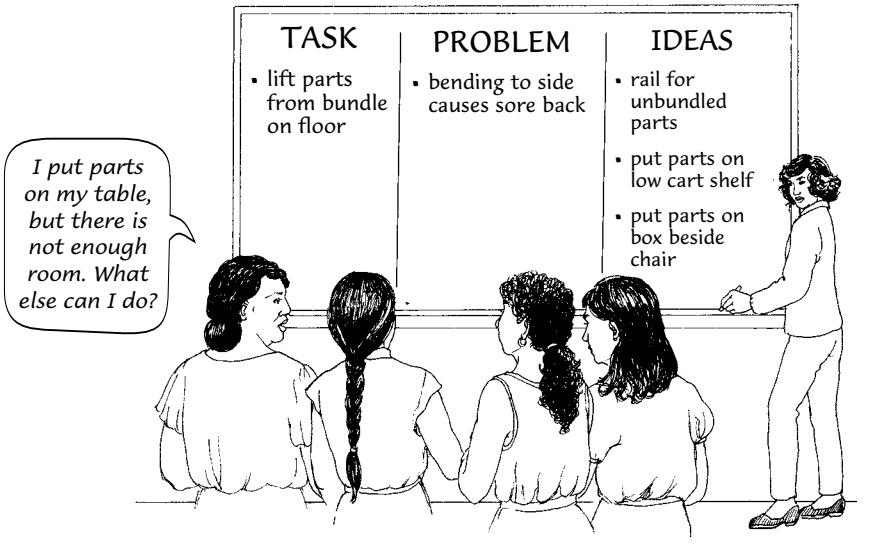
ERGONOMIC TRAINING FOR ALL

Factories are safer when workers actively participate in training and decision-making about the work process. A worker-led Health and Safety Committee, or a joint union-management committee, can demand ergonomic safety training for all employees. Workers can also organize to train each other based on their own experience. You can share ideas and skills for using tools and doing tasks without getting injured.



ACTIVITY

Finding solutions to ergonomic problems



You can use the answers to a survey or body mapping activity to decide which ergonomic dangers to eliminate first. Choose a task that is causing problems and share ideas for reducing the danger by changing the equipment, furniture, tools, or the way the work is done. Answering the questions below can help you think about different ways to solve each problem.

Repetition: How can you reduce the number of times you repeat the same movement?

Uncomfortable positions: How can you reduce reaching, bending, or working in other uncomfortable positions?

Force: How can you do less lifting or lowering of heavy loads? How can you use less force to push, pull, and grasp?

Staying in one position: How can you work without sitting, standing, or holding part of your body in the same position all the time?

Pressure on the body: How can you keep hard edges or tool handles from pressing on your body?

Vibration: How can you reduce vibration from tools or equipment?

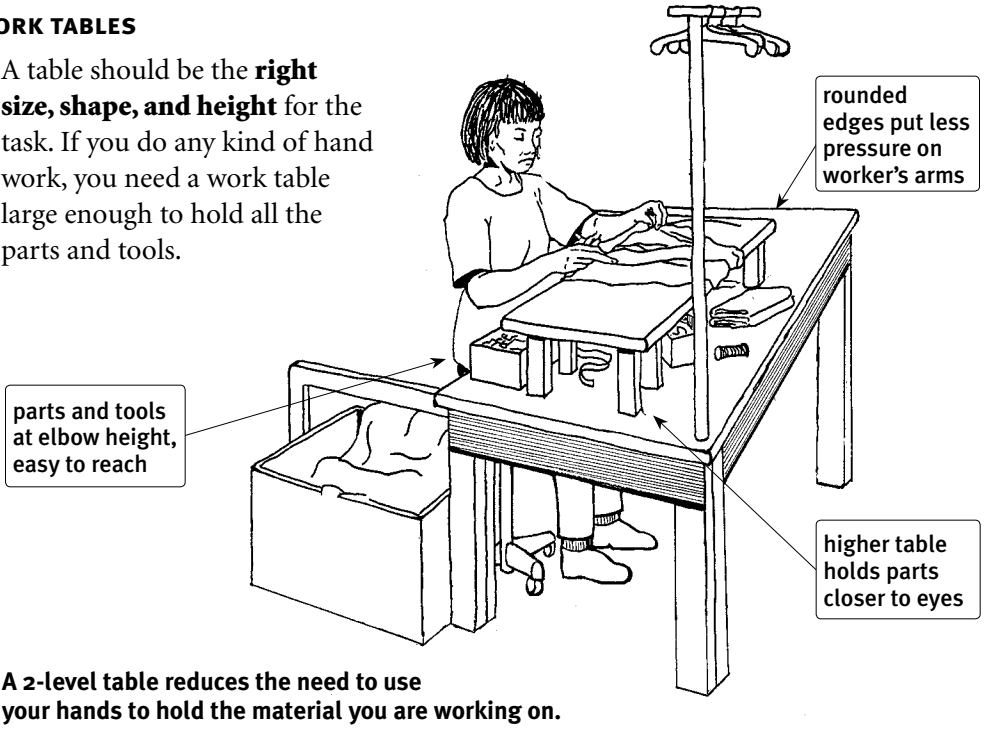
You may have to try several changes before you find a solution. Some ideas will not work in every situation. Other solutions may cause new problems. A change that helps one worker may not help other workers doing the same job.

Listen to everyone's ideas. Be ready to try different ideas and reconsider decisions about the best solution to each problem.

More comfortable work stations

WORK TABLES

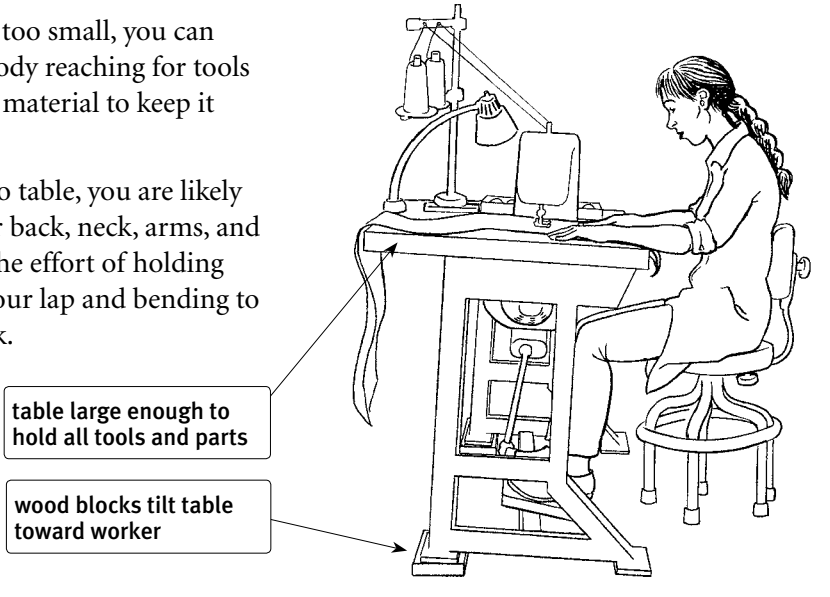
A table should be the **right size, shape, and height** for the task. If you do any kind of hand work, you need a work table large enough to hold all the parts and tools.



A 2-level table reduces the need to use your hands to hold the material you are working on.

If the table is too small, you can strain your body reaching for tools and grasping material to keep it from falling.

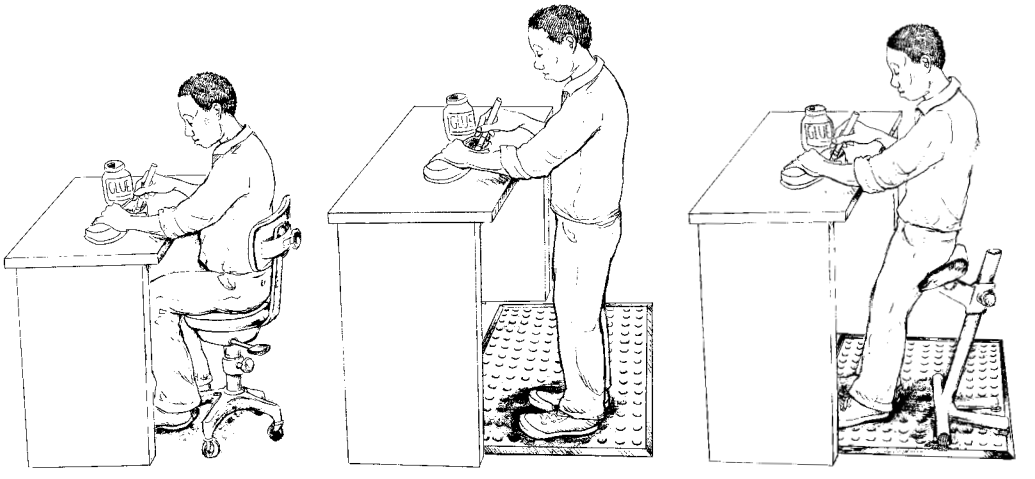
If you have no table, you are likely to strain your back, neck, arms, and hands from the effort of holding material in your lap and bending to see your work.



A tilted table makes it easier to see without bending forward.

Be comfortable sitting or standing

Workers who stand need **tables that can be raised and lowered** to the right height for each worker. **Soft-soled shoes** and **padded floor mats** reduce leg pain for workers who have to stand for long periods of time.

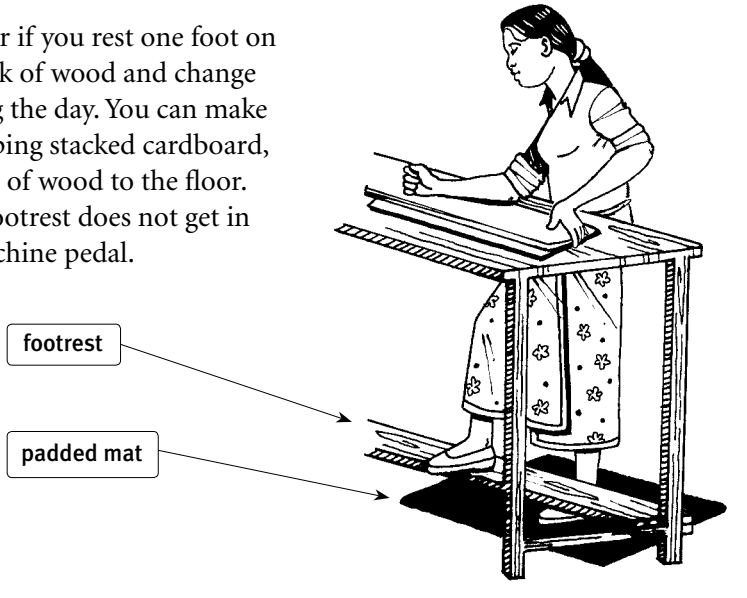


Sitting

Standing on padded floormat

Standing with a sit-stand chair for support

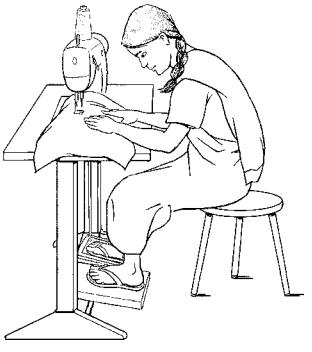
Standing is easier if you rest one foot on a brick or a block of wood and change positions during the day. You can make a **footrest** by taping stacked cardboard, paper, or a piece of wood to the floor. Make sure the footrest does not get in the way of a machine pedal.



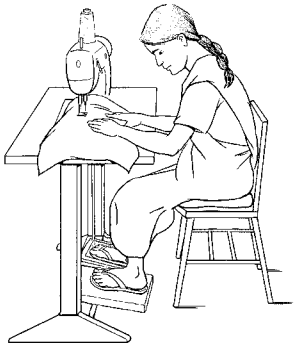
CHAIRS

A chair should support your legs, hips, back, and body while you work. To be comfortable, a chair needs to fit the size and shape of the worker who sits in it. A work chair should have a **padded seat and backrest.** You may consider asking the boss to supply chairs that each worker can adjust for the height and tilt of the seat and the backrest. A "sit-stand" chair lets a worker alternate between sitting and standing with support. Stools or sit-stand chairs should be available for workers who stand a lot.

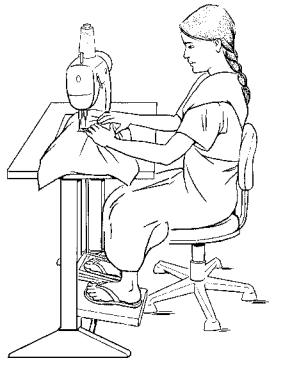
A better chair



Bad: hard chair or stool



Better: chair with cushion and backrest



Best: adjustable chair with backrest and footrest

ACTIVITY

Until you get better chairs, a seat cushion can make a difference

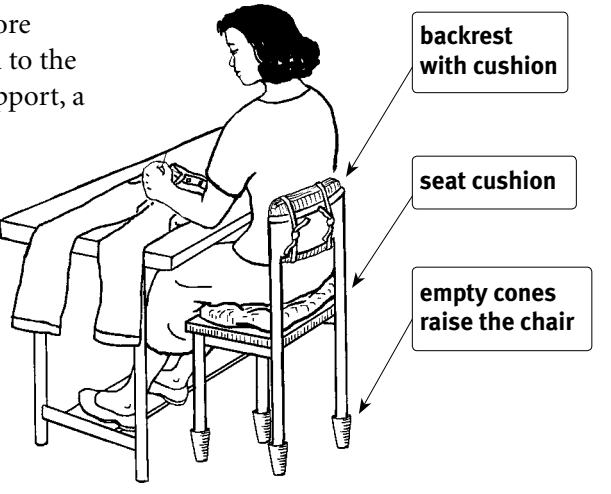
1. Use rough material to keep the cushion from slipping. Attach the cushion to the chair with string, tape, or strips of fabric.
2. Use a firm cushion. Material that is too soft will quickly lose shape and support.
3. Adjust the thickness of the stuffing so you are at a comfortable height for working. Too high will make you bend your neck forward. Too low will make you raise your arms or shoulders.
4. Make the cushion wedge-shaped to allow your knees to be a little lower than your hips.

Ideas for adapting chairs

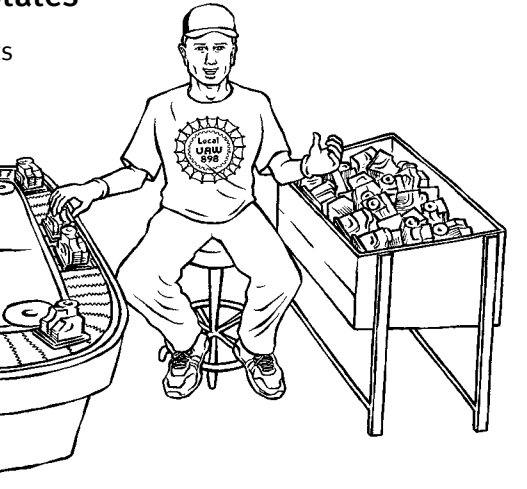
Garment workers often raise their chairs and work tables by putting empty thread cones or spools under the legs. If you try this, make sure the cones are not cracked. To be safe, the chair needs to be stable and not wobble.

You can make a stool or chair more comfortable by adding a cushion to the seat or backrest. To give good support, a backrest should fit against your lower back and help you sit upright.

Attaching fabric or other padded material to the hard edges of tables and chairs will also protect you from pressure while sitting or leaning.



Now we have chairs —United States

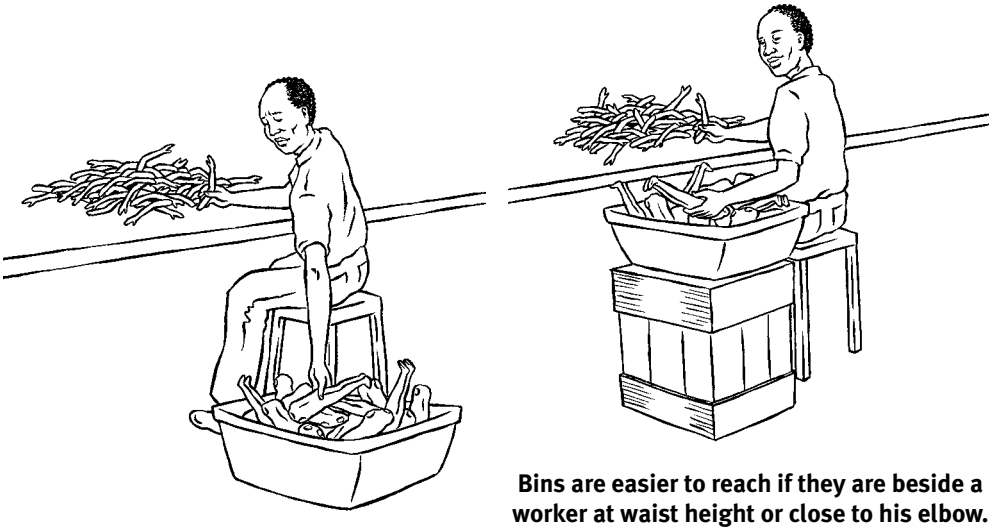


My name is Bob, and I work in an auto parts factory in the United States. Workers in our factory used to make a seat by turning an empty bucket upside down and covering the bottom with foam rubber. We sat on the buckets when our backs and knees hurt from standing too long. We hoped the boss would notice that we needed chairs. He was not paying attention, but our union representatives noticed. They raised the problem with a joint worker-management committee in charge of preventing ergonomic injuries. Under our union contract, the committee can demand that the boss make changes to protect workers' health. Now we have chairs with backrests and foot rails. I can adjust the height of my chair so it is easy to alternate between sitting and standing. At my job inspecting motors, I like to stand in the morning and sit in the afternoon.

ARRANGING YOUR WORK STATION

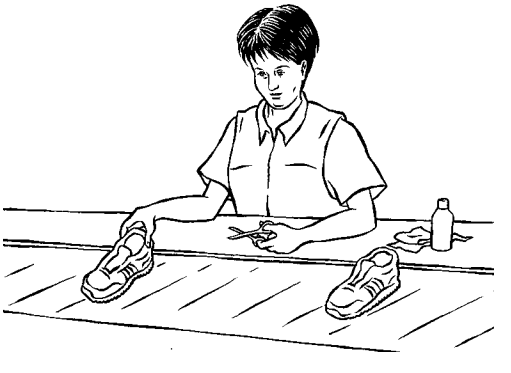
Workers should not have to twist their bodies or bend over to reach parts or tools. You can reduce reaching and bending by placing tools and materials in front or beside you in a way that limits reaching to about 40 centimeters (16 inches) or less.

Components and tools should be easy to reach.



Bins are easier to reach if they are beside a worker at waist height or close to his elbow.

Workers who sit down can place bins and carts as close as possible to their chairs, or far enough away so that they must stand up and move to use the bins. Alternating between sitting and standing reduces body strain during the work day.



A conveyor belt at arm's length reduces the need to reach.

Kyoung's Story — Korea

My name is Kyoung. I walk home from work with other sewers from my factory in Korea. We talk about problems at home and at work. One problem we all have is pain in our backs and legs. We sit all day bent over our work, and we sit on stools that are uncomfortable. When we started talking, I noticed my stool was too low for me. My friend Yoewan had trouble seeing. Aehwa's legs would get sore and numb. We decided to watch each other work when we had the chance. On our walks home the next week, we gave each other ideas about how we could sit and work so that our backs and legs would not hurt so much. We thought about what we could use to make our stools more comfortable.

I decided to make my stool taller by stacking pieces of cardboard on the seat. Yoewan decided she needed more light near her machine, so she brought in a small lamp she had at home. Aehwa decided to make a footrest from scraps of wood to support her legs during the day. We also made cushions for our chairs out of scrap cloth. Now I see other women trying things like this. We feel better knowing we can change some things.

What do you think?

Should workers do what they can to improve their workplace themselves without involving the boss?

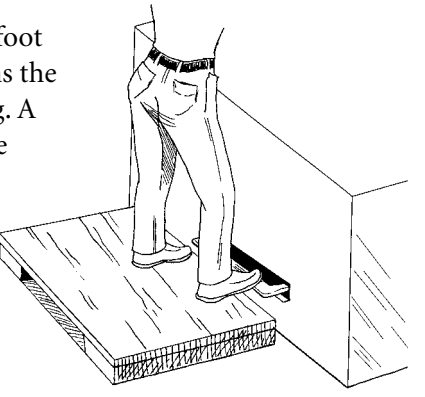
Why or why not?

SWITCHES AND PEDALS

Foot pedals, knee pedals, and switches are safest when you can operate them without using much force.

Foot pedals are best for seated jobs. Raising your foot off the floor every time you press the pedal strains the legs and lower back, especially if you are standing. A pedal wide enough for both feet allows you to use either foot or alternate between feet.

A pedal should be positioned so you can sit or stand at a comfortable distance from the machine. A moveable electronic treadle may be the best choice for machines shared by several workers.



The platrform helps reduce strain from pressing the pedal.

Machine switches, levers, and handles should be easy to reach without stretching, bending, or raising the arms above the shoulders. You should be able to operate a switch with only a small movement of your arm, leg, or foot.

LIGHTING

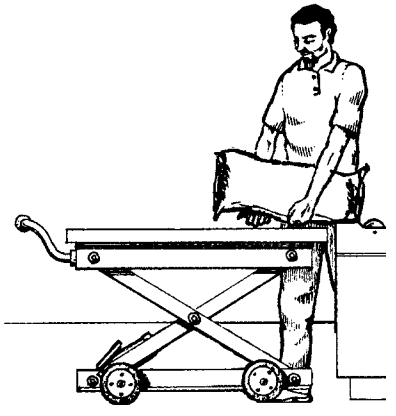
Workers need proper light to see their work clearly. Bending, squinting, and straining to see your work can injure your back, shoulders, neck, and eyes. An adjustable task light at each work station can put more light where it is needed most. For more ideas about improving lighting in the factory, see "Light" on pages 140 to 141.

Lifting, carrying, and moving supplies

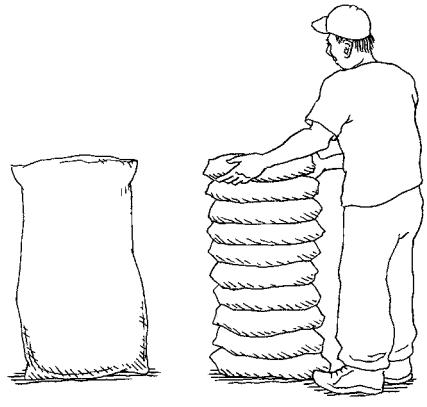
Moving supplies, materials, products, and waste around a factory is hard work and causes many injuries. Here and on pages xx and xx, we show examples of safer ways to move and carry materials. Some of these solutions suggest using more machines instead of people to do the work. These solutions will reduce some kinds of injuries but may also reduce the number of workers needed to do the job. For this reason, it is important for workers to discuss how any workplace change can protect both their health and their jobs.

Avoid lifting heavy parts or materials

Lifting heavy weights from the ground can cause serious back injuries and other body strains. Here are examples of safer ways to move a heavy sack.

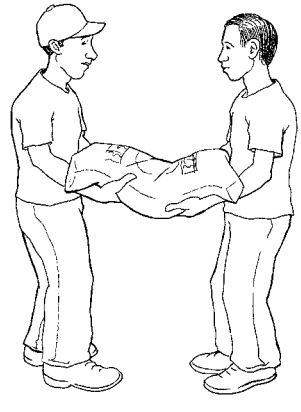


Use a mechanical lift to raise the sack from the floor.



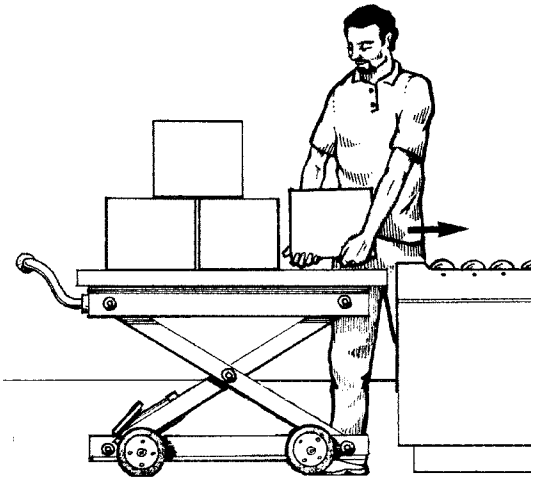
Break the sack into smaller loads.

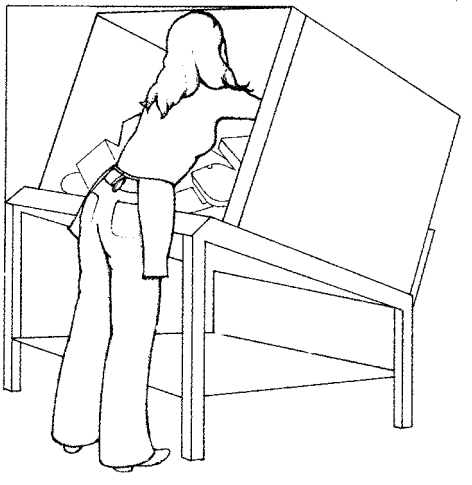
Move the sack using a hand truck.



Share the work by lifting the sack with another worker.

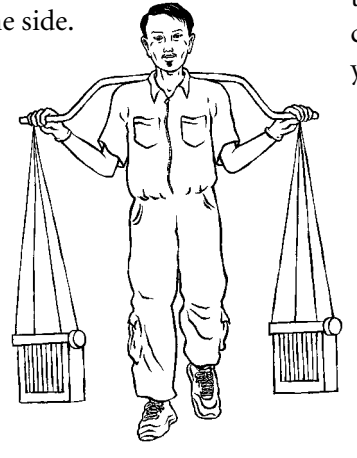
Factory surfaces the same height reduce lifting from the ground and above the waist. Carts with shelves at the same height as work tables make loading and unloading easier.



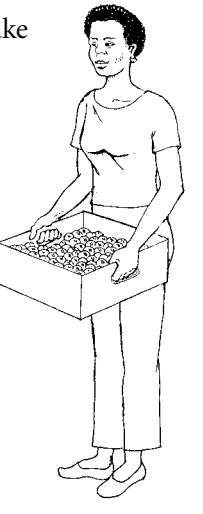


Raised, tilted bins and spring-loaded bin bottoms reduce the need to bend over to reach parts at the bottom of the bin.

Balanced loads are easier to carry than a load carried on one side.



Proper handles without sharp edges on boxes, barrels, bins, and equipment make them easier to lift and carry without straining your hands and arms.



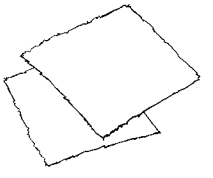
ACTIVITY

How to make a spring-loaded cart

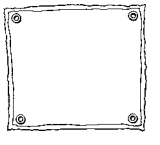
Adding a spring-loaded bottom to a deep cart can make it easier to reach items at the bottom of the cart. The spring-loaded bottom moves up as you unload the contents of the cart.

Materials needed: canvas fabric, grommet-holer or button-holer, 4 strong elastic cords (bungee cords).

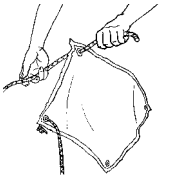
1. Make a rectangle out of the canvas to be the false bottom for the cart. You may need two or more layers of fabric.



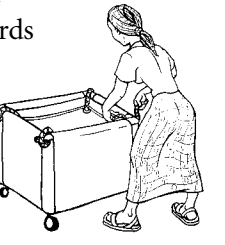
2. Make a hole in each corner of the canvas rectangle. A reinforced button hole or metal grommet will last longer than a torn hole.



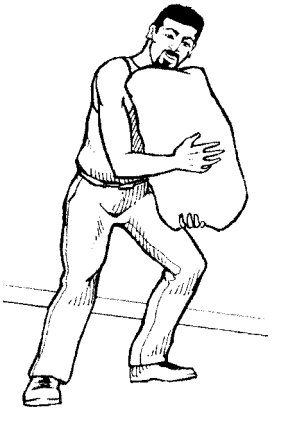
3. Place an elastic or bungee cord through each hole in the canvas and secure it. Place the canvas in the cart and secure the other end of the elastic cords to the top corners of the cart.

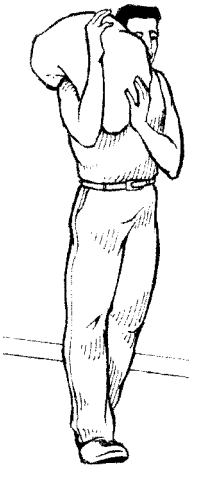


4. Adjust the length of the elastic cords to allow the false bottom to rise to just below the top of the cart when it is empty. The cords should stretch to the bottom of the cart when full. If your cords don't do this, find a different kind of cord or a different length.



Lift with your legs, not with your back. If you must lift things from the ground, try to lift with the load close to your body with back straight and feet stable on the ground. Use your legs to lift your body and the load at the same time.





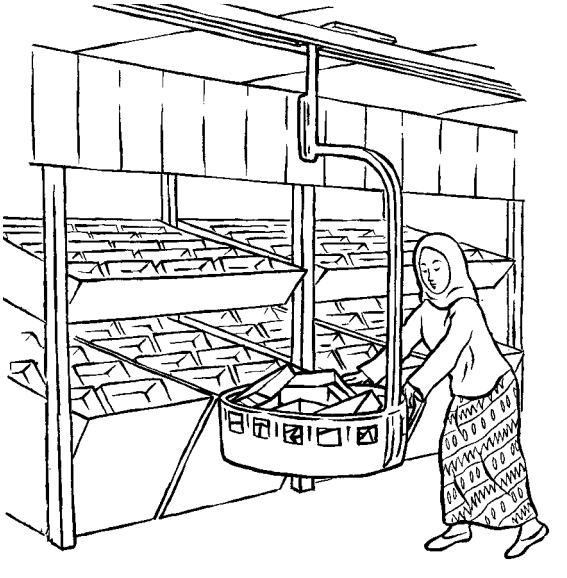
Powered machines, such as **fork lifts**, **conveyer systems**, and **rail systems** eliminate certain dangers by doing the work of lifting and moving materials.

These machines add new dangers to the workplace, such as injuries from fork lift collisions or moving conveyer parts. They can also cause air contamination from fuel and engine exhaust.

An electric powered lift truck does not contaminate the air.

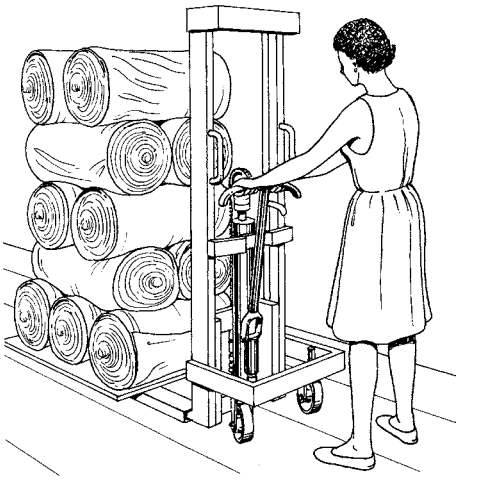
Passive conveyors allow you to push parts and boxes over rollers between workstations instead of carrying them by hand or cart.

Rail systems allow you to push or pull parts or tools around the work area from a rolling holder. This is especially useful when things need to hang, such as finished clothing or material ready for dipping or spray coating.

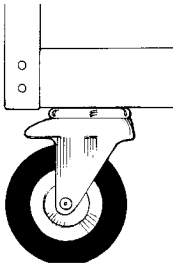


Wheels

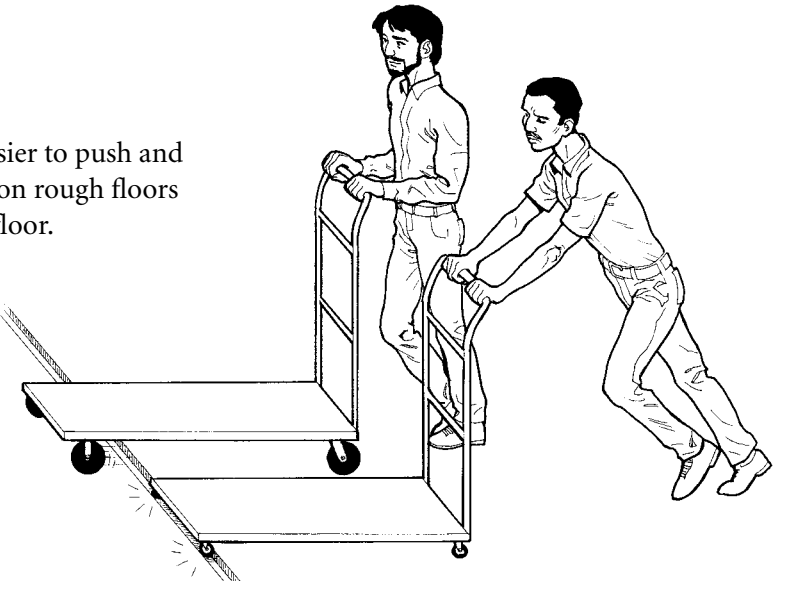
Wheels make moving easier as long as hand trucks, trolleys, carts, and bins are kept **in good repair.**



Wheels covered with rubber or a similar plastic last longer and are easier to move than uncovered metal wheels.



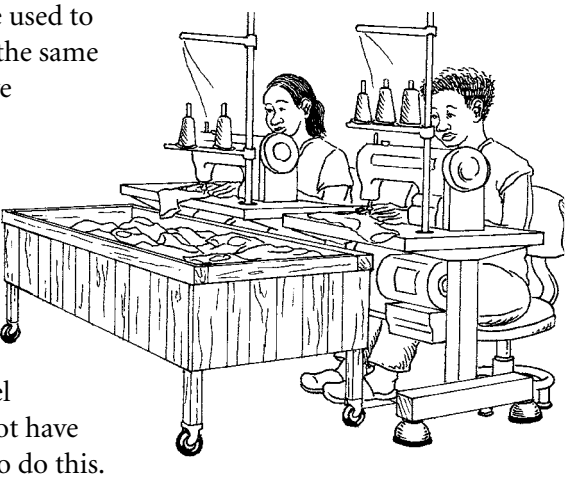
Larger wheels are easier to push and maneuver, especially on rough floors and over gaps in the floor.



Wheels need to be cleaned often to keep turning smoothly. You can remove dirt and debris from the wheel surface with a stiff brush. Wheels will also last longer with regular cleaning and maintenance.

When a damaged wheel cannot be repaired, replace the wheel right away. This will prevent strains to workers and damage to the cart or trolley. The boss is responsible for keeping a supply of replacement wheels on hand.

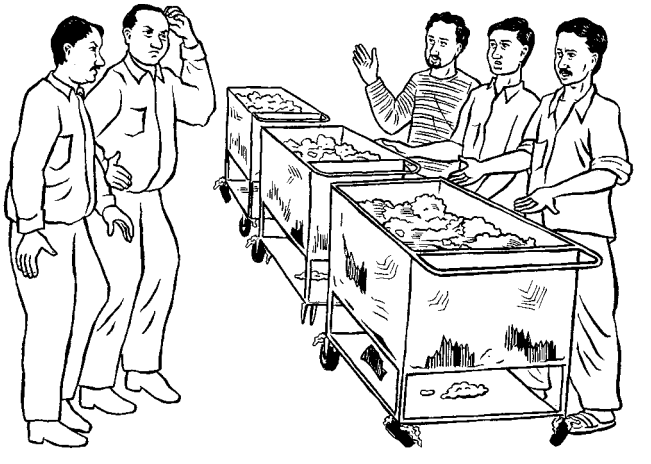
A workstation **bin on wheels** can be used to bring supplies and remove waste in the same container, reducing the need to move things from one bin to another.



Wheel brakes help workers control movable equipment and keep it from moving unexpectedly. Movable bins, carts, and tables should have brakes on the wheels. You should be able to easily lock or unlock wheel brakes with your foot. You should not have to use much pressure or bend over to do this.

New carts replace old sticky wheels — India

Our factory uses a lot of cotton waste to make a chemical product that is very sticky. It makes the factory floor wet and sticky. Workers use carts to move the cotton waste around the factory, but the carts used to break down a lot. Cotton waste and residue from the floor stuck to the wheels making them hard to roll. The wheels also rusted because they were never cleaned or repaired.



The union had demanded new carts several times, but the boss did not respond. One morning, we lined up all the carts in front of the door to the office block. Every visitor had to pass through that door and look at the exhibit of broken carts. By 10 AM, the managers started to arrive. At first they did not understand why the carts were in front of the door. Finally, the director came and asked what was going on. He ordered us to remove the carts and talk with the managers about the problem. We again demanded new carts. This time they agreed. It took 3 months for the new carts to come, but we got them!

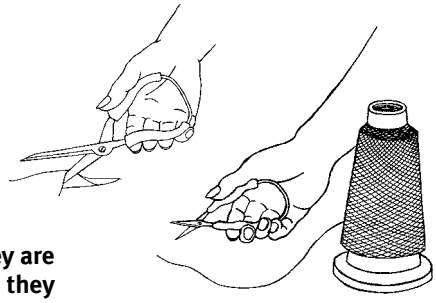
Tools

Having the right tool for each task means you can do high quality work faster and more safely. Workers usually do not get to choose the tools they use, but you may be able to adapt tools or use the examples on these pages to demand better tools for your work.

The right tool fits the worker and the task

Workers' hands come in many sizes, and men's hands are a different shape than women's hands. Most hand tools also come in different shapes and sizes. To help prevent strain to fingers, hands, arms, and shoulders, each worker should use tools that fit the size and shape of her hands.

A tool should be only as large and sturdy as needed to do the job. The shape and features of a tool, like a bent handle or a ratchet, can make repetitive or forceful tasks easier.

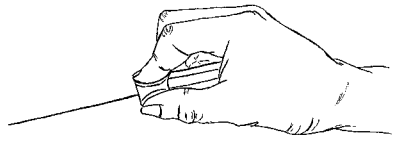


These scissors are the right size for the job. They are lightweight, sharp, shaped to fit your hand, and they open on their own.

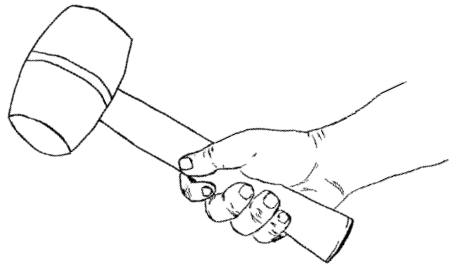
A comfortable handle fits in your hand. It is not too large or too small to grip, and does not have sharp edges that press into your fingers or palm.

Tools with 2 handles should close easily and open on their own. Usually they have a spring that pushes the handles back open.

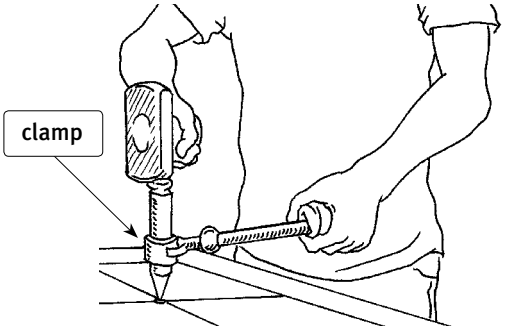
Tools you hold with your fingers for control and accuracy should be small enough to hold between your fingers and thumb.



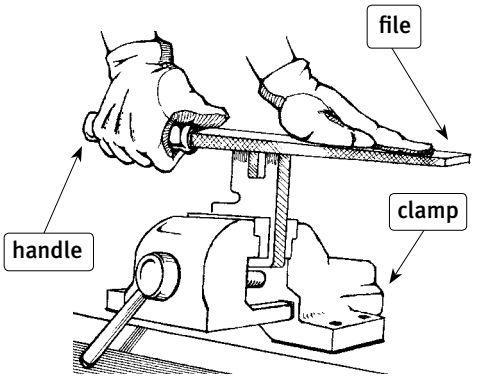
Tools you hold with your whole hand for power, such as a hammer, should be large enough for your fingers to wrap around the handle.



Clamps and handles help you grip tools and parts more securely. Handles also help protect your hands from sharp points and edges.

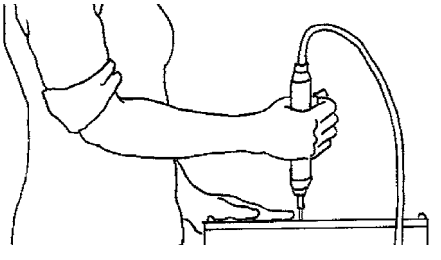


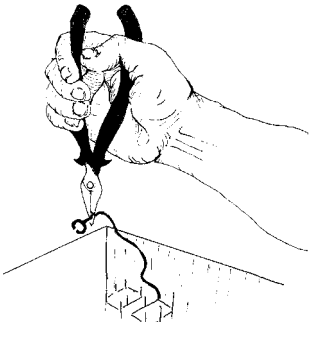
A clamp can be used as a handle to hold a tool.



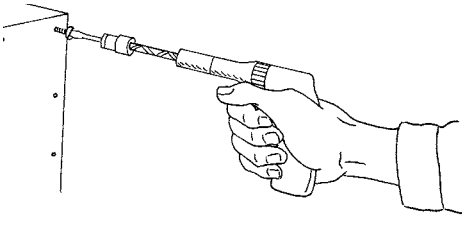
This clamp holds the piece so both hands can do the filing.

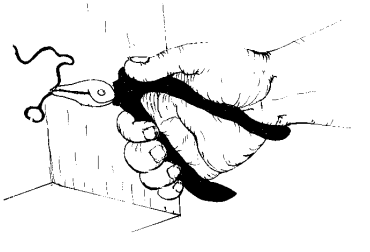
Bent or straight tools help keep your wrist straight when pointing tools in different directions.





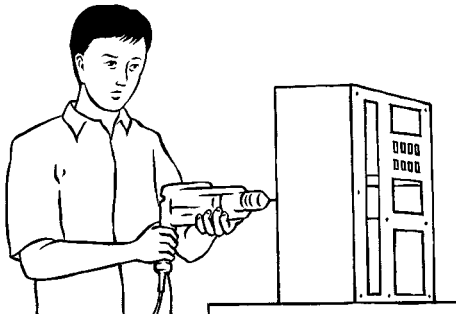
Tools with straight handles keep your wrist straight when you point the tool in a direction other than the way your arm points.



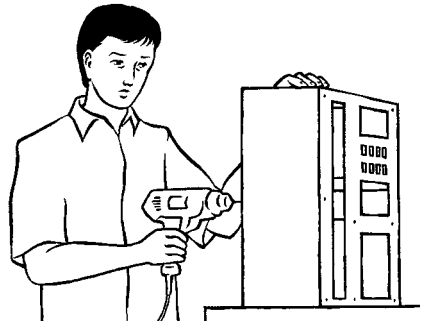


Tools with bent handles keep your wrist straight when you point the tool in the same direction as your arm.

A balanced tool is evenly weighted so you do not have to strain to hold the tool in position.



This drill is unbalanced because the handle is behind the heavy motor. To use the drill you must support the front end with your other hand.

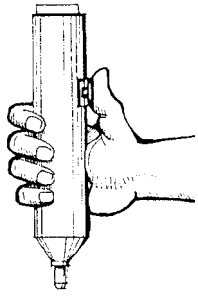


This drill is balanced because the handle is below the heavy motor. This drill can be used easily with one hand.

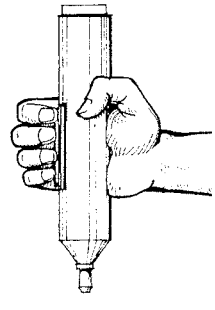
A forearm support holds the weight of your arm in a comfortable position. This makes fine detail work easier.

This worker's arm support helps prevent strain in her back, neck, shoulder, and arms.

Tool triggers are easier to use when they are wide enough to press with all 4 fingers instead of the thumb.

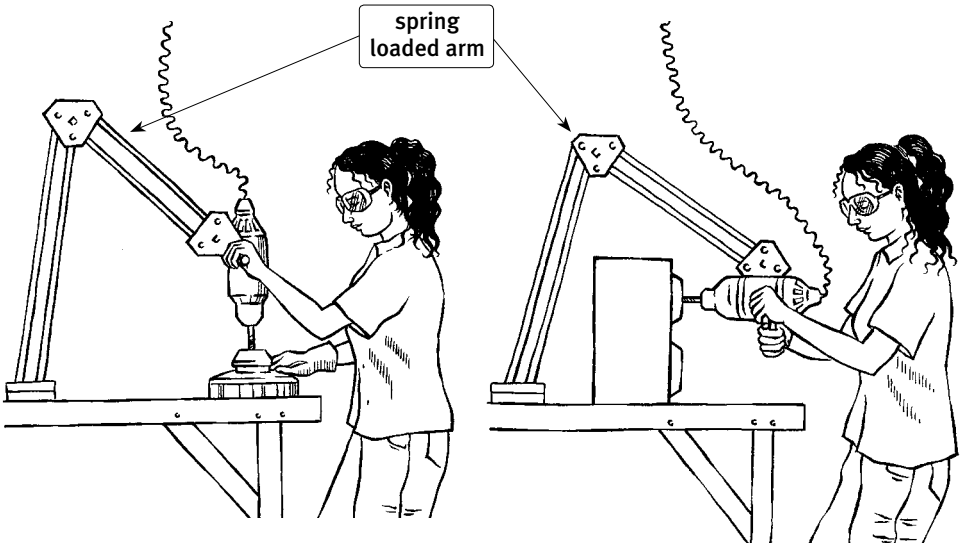


With this tool, the thumb has to stretch and work alone to press the trigger.



With this tool, the fingers can share the work of pressing a wide trigger. The thumb helps grip and guide the tool.

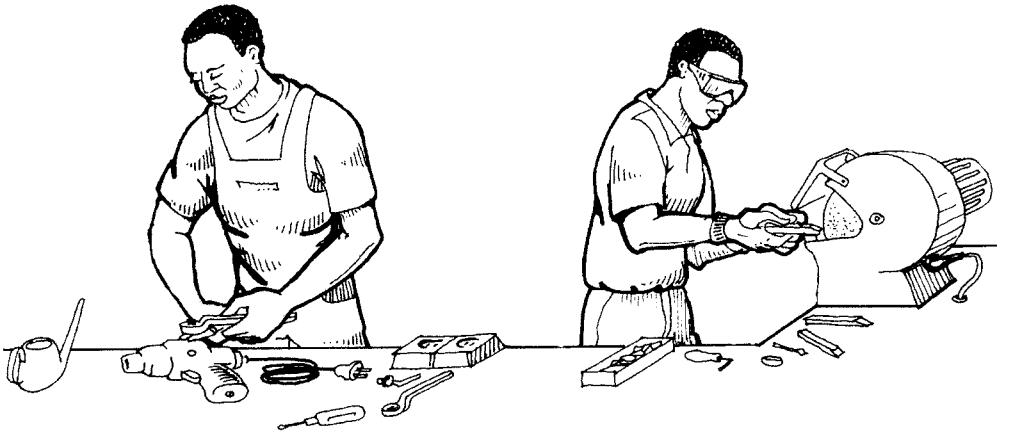
Hanging heavier tools by a spring-loaded arm positions them in the right direction for work, so you do not have to pick up, set down, and support the tool each time you use it. A hanging tool should be easy to move around the work area where it is used.



A spring-loaded arm holds up the weight of the drill while the worker is using it.

Maintenance and repair

Workers can do their jobs best when their work stations, tools, and equipment are always clean and in good repair. Dull cutting tools, parts and machines clogged with dirt, and unstable furniture can cause strain and other injuries.



Regular maintenance of equipment also prevents injuries.

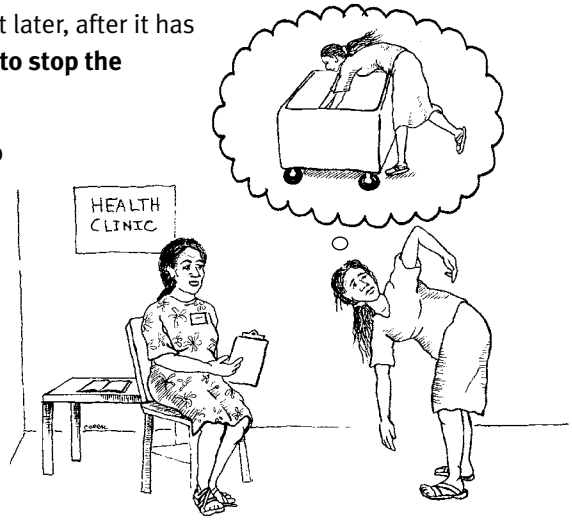
Treat injuries sooner than later

Injuries caused by overusing or straining any part of your body can be very painful and slow to heal. The most serious injuries can disable you permanently. If bosses do not protect workers from these injuries, workers have to quit or are fired when they become injured and can no longer do their jobs. This is one reason why there are very few older workers in EPZ factories.

If you have aches, pains, swelling, tingling, burning, or numbness in any part of your body, you may be injured.

If these feelings last longer than a week, you should see a health worker. The injury may require rest or other treatment, and may get worse if it is not taken care of. Treating a problem before it gets serious is much easier and faster than treating it later, after it has gotten worse. **Taking medicine to stop the pain will not cure the injury.**

Sometimes the best cure is to rest the injured part of your body. If this is not possible at your job, try to look for other jobs at your factory that can rest your injuries. Or, find out if your job tasks can be changed temporarily while you are healing.



Anna tells the health worker how her back hurts from reaching into carts.

When you visit a health worker, explain why you think your pain is due to your work. She has probably never done the work you do, so you must show her. Act out the physical moves required by your work so she can see clearly what you do all day.

Many doctors are not helpful treating work injuries. They do not have training or experience with the dangers of factory work. Some doctors do not believe workers' injuries are real. Ask other workers if they know a good doctor to see for workplace injuries and illnesses.

For more information about getting health care, see "Access to care" on pages xx to xx.

Using your body carefully

Sometimes you can reduce strains by changing how you use your body for some tasks. For example, if you have to bend forward to see your work, try moving closer to the work surface.

If the pressure to work fast makes you grip parts and tools very tightly, try loosening your grip. You may find that you can work just as fast with your hands more relaxed.

When you move a bundle, box, or parts, try turning your whole body, rather than twisting at the waist.

Pushing rather than pulling carts and hand trucks creates less strain on the back, legs and shoulders. Instead of waiting to move a cart when it is completely full, move it when it is less full and lighter. This lowers the chance of tipping the cart or straining while moving it.

Try not to stay in the same position for a long time. For example, can you switch between sitting and standing during the day? Can you do several different kinds of work in the factory each day instead of the same tasks all day?

TAKE SHORT STRETCH BREAKS

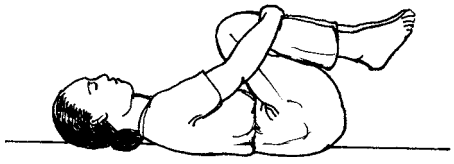
Stretching increases blood flow through your body and helps relax tight muscles. **Stretching will not keep you from being injured by strain and overuse from work.** Try making time to stretch before work, during breaks, at lunch, and after work. Here are some examples of stretches that can be helpful to factory workers. Repeat the movements in each stretch slowly and gently 5 to 10 times.

Stretches for the neck

Neck: Roll your head slowly in a full circle.

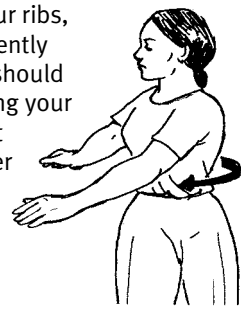
Shoulders: Move them up and down, roll them forward and backward, pull your shoulderblades behind your back.

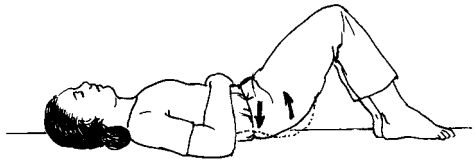
Stretches for the back



Lower Back: Lie on your back and hug your knees. Relax, still holding your knees.

With your back long and straight, twist your ribs, chest, and face gently to one side. You should feel a stretch along your whole back. Twist gently to the other side.



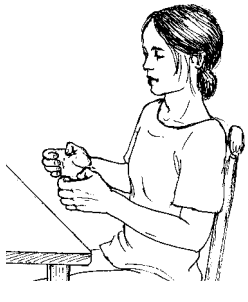


Hip tilt: Lie on your back with your knees bent. Push your lower back into the floor by slowly tightening your stomach and buttock muscles. Relax, and your back will curve up the way it usually does.

Stretches for the hands and forearms

1. Make a fist, gently.

2. Open your hands, stretching your fingers out.



3. Curl your fingers into a claw. Then open your hands again.

Gently roll your hands in a circle at the wrist.