



文職系

Sedentary Workers Safety and Health Bulletin

安全健康通訊

辦公室人體工效學與職安健及辦公室舒展運動 Ergonomics & Occupational Safety and Health in Office and Office Stretching Exercises

引言 Introduction

「人體工效學」(Ergonomics)一詞源於希臘文，意思是工作的法則，目標是以操作者作中心，根據人體的能力設計最適合人體使用的工作間、器材、工具及工作方法等，以提高生產力及工作效率，簡化工作程序及減少出錯甚至是發生工傷意外的機會。除了應用於工業之外，人體工效學亦可適用於辦公室，以提供一個安全、健康及舒適的工作環境予文職系人員。

The term "Ergonomics" derives from Greek, carrying the meaning of the laws of work. With an operator-oriented approach, ergonomics is concerned with designing the most suitable workstations, equipment, tools and practices for people based on the physical features of human body, for the purpose of enhancing productivity and work efficiency, simplifying working procedures and reducing the possibility of mistakes and even work injuries and accidents. Apart from industrial application, ergonomics can also be applied to offices so as to provide a safe, healthy and comfortable working environment for sedentary workers.

工作間的設計 Design of Workstations

辦公室人員的工作間主要包括工作枱、座椅及文件櫃 / 貯物櫃，亦有不同的器材及用具包括顯示屏幕設備、電話、文具、文件匣等。工作桌及座椅的高度與尺寸，與及器材及用具的擺放位置，均需要配合使用者的身體尺寸，以方便其保持正確工作姿勢，保障其職業健康。

Workstations for office staff are equipped with desks, chairs and filing cabinets / storage cabinets, and different kinds of equipment and tools such as display screen equipment, telephones, stationery and document racks. The height and other dimensions of a workstation and chair and the location of equipment and tools should fit the body size of the user, in such a way that the user can always maintain a proper posture at work for occupational health purposes.

工作枱 Desks

- 高度應視乎使用者的身材及所需的工序。

A desk should be adjustable in height to fit the body size of the user and the work nature concerned.

- 枱面應有足夠空間讓使用者進行工作，與及放置電話、文具及其他需使用的工具。如有放置顯示屏幕設備，除了要有空間放置鍵盤及滑鼠之外，亦要確保有足夠空間讓使用者操作它們。

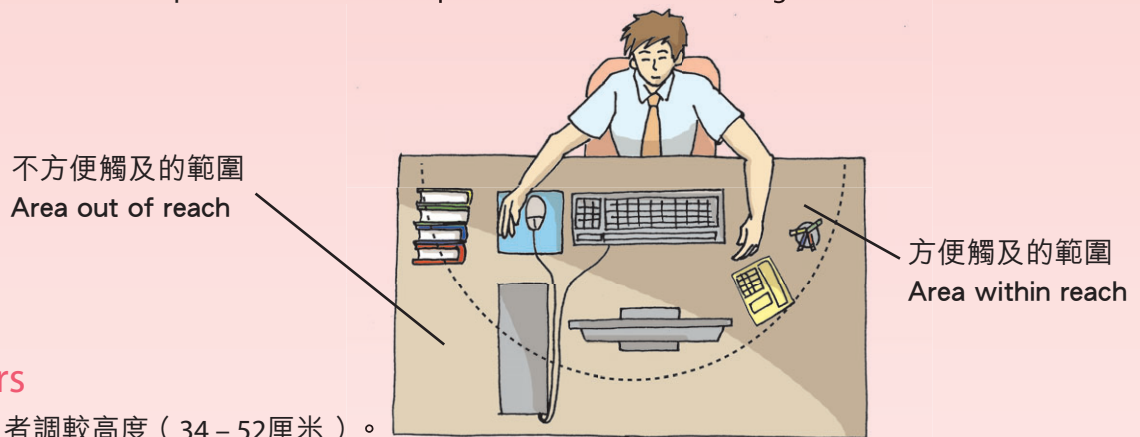
The desktop should allow sufficient space for operation and placement of telephone sets, stationery and other necessary tools. If there is any display screen equipment in use, make sure that enough room is available for user operation apart from the spaces for keyboard and mouse.

- 常使用的用具應放置在觸手可及的範圍內。

The tools frequently in use should be placed within reach of the hands.

- 枱下應有足夠深度及闊度讓使用者舒適地放置雙腳。

There should be sufficient space below the desktop for the user to stretch his legs at ease.



座椅 Chairs

- 應可供使用者調較高度（34 – 52厘米）。

Use chairs with adjustable heights (34 – 52 cm).

- 可轉動的座椅能方便讓使用者活動，但要留意座椅的穩固性，一般而言，可轉動的座椅應配以滑輪式五點座腳。

Rotary chairs allow easier movement but always pay attention to their stability. Generally, rotary chairs should have a five-pronged base.

- 應有可為腰背提供足夠承托的靠背板。

Use chairs with back-rests to provide sufficient lumbar support.

- 座板的大小應配及使用者的大腳長，不可過大亦不可太小，應讓使用者可把背部貼緊靠背板之餘，又可為大腳提供足夠承托。座板的前端最好為圓斜型。

Chair pans should fit the length of the users' thighs so that the users can lean on the back-rests with their thighs on firm support. The leading edge of chairs should ideally be round in shape.

- 按工作情況及使用者需要而決定是否需要靠手。但若有使用顯示屏幕設備，而枱面或鍵盤架又沒有足夠空間承托使用者雙手，則必須提供靠手。

Use armrests based on work conditions and user needs. If a user is required to work with display screen equipment without sufficient support from the desktop and keyboard drawer for both hands, armrests must then be provided.

文件櫃／貯物櫃 Filing Cabinets / Storage Cabinets

- 擺放位置要適合，以防使用者扭動腰背或彎腰取物。

Place the cabinets at a suitable location to avoid back twisting or bending over to reach items.

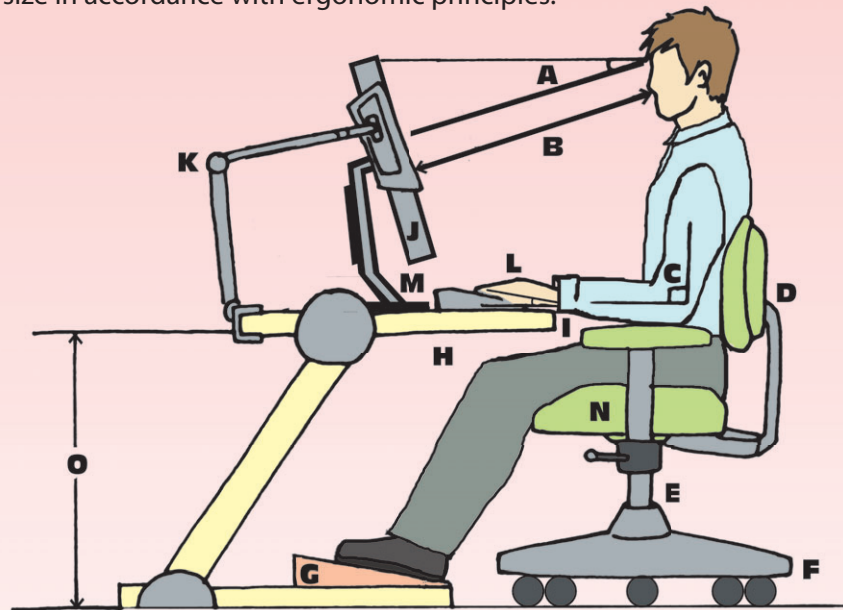
- 常用的物件／文件應盡量放在櫃內方便拿取的位置。

Items / documents frequently in use should be placed in the easiest accessible areas inside the cabinets.

顯示屏幕設備工作間 Display Screen Equipment Workstation

當工作間有放置顯示屏幕設備時，我們必須根據人體工效學的原則，配合使用者的身體尺寸設計最適合其使用的工作間。

When display screen equipment is installed at a workstation, we should design the most suitable workstation based on the user's body size in accordance with ergonomic principles.



- A. 觀望角度15度至29度
Maintain a viewing angle of 15-29 degrees
- B. 觀望距離35-60厘米
Maintain a viewing distance of 35-60 cm
- C. 前臂與手臂大約成90度
Keep upper arm and forearm at approximately 90 degrees
- D. 可調校的椅背
Use a chair with adjustable back-rest
- E. 可調校的座位高度34-52厘米
Use a chair with adjustable height of 34-52 cm
- F. 安裝有五個腳輪的椅底
Use a five-wheeled chair
- G. 如有需要，可使用穩固的腳踏
Use a firm footrest if need be
- H. 膝部前應有足夠空間
Leave adequate space between the desktop and the knees
- I. 如有需要，可使用前臂／手部支座
Use armrests if need be
- J. 螢幕與視線成直角
Screen at right angle to line of sight
- K. 可調校的文件架
Use an adjustable document holder
- L. 手腕傾斜度 ≤ 10 度
The wrists should bend no more than 10 degrees
- M. 螢幕支座，可調校作旋轉及傾側之用
Use a screen support adjustable for rotation and titling
- N. 圓邊或渦形邊的座墊
Use a rounded or scrolled edge seat pad
- O. 可調校的枱高
Use a desk with adjustable height

體力處理操作 Manual Handling Operations

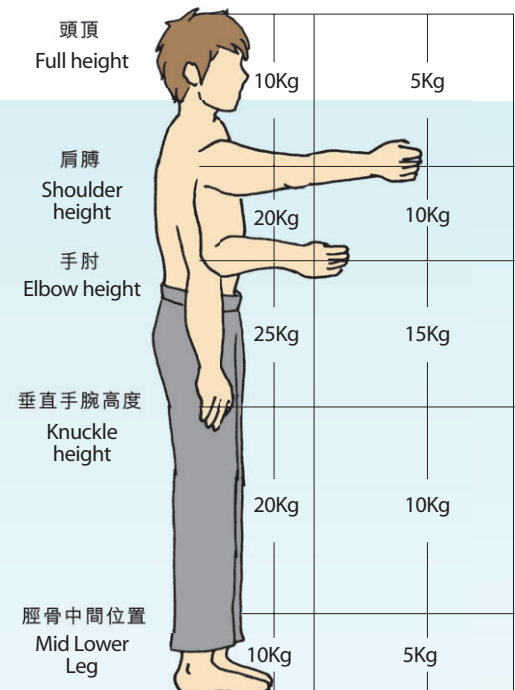
人體工效學也可用於辦公室內重物如電腦、文件匣、水樽或其他物資的搬移，以減低受傷的機會。例如以腳力而不用腰力提舉重物，就是考慮到人體的腳力遠比腰力強，與及腰部比腳部容易於提舉動中受傷。此外，考慮到人體能力的限制，我們亦要盡量避免徒手提舉重於16公斤的物件。以下是提舉16公斤或以下重量的物件時，因應人體能力而作出的每分鐘最高頻次的建議：

The ergonomic principles can also be applied to the lifting of heavy office items such as computers, box files, large water bottles or other materials so as to reduce the chance of injury. A case in point is to lift heavy items with forces in your legs rather than your waist. This is because the feet are more forceful than the waist while the waist is more vulnerable than the feet in an act of lifting. Considering the limit of human body, we should refrain from lifting any item with bare hand(s) that weighs over 16kg. Below are suggestions about the highest frequency per minute according to the human body's capacity when a person lifts an item of 16kg or below:

物件重量 (公斤) Weight (Kg)	每分鐘最高頻次 (若超越此數字， 有受傷風險會增加) Highest frequency per minute (Risk of injury increase if the following numbers are exceeded)
2 - 3	12
4 - 8	5
9 - 10	2
11 - 16	1

資料及圖片來源：勞工處《體力處理操作指引》

Source: 《Guidance Notes on Manual Handling Operations》 by Labour Department



此外，根據人體力學原理，物件離身體越遠，提舉所需要的力量就會越大，亦即是說，重物會為身體帶來更大的壓力，增加受傷的機會。所以提舉時我們要盡量將重物貼近身體。但因應工作環境或需要，某些體力處理操作可能並不容許重物貼近工友的身體。若出現此情況，可參照右上圖之各位置的建議可提舉重量，以防工友受傷：

According to body mechanics principles, the farther an item is away from the human body, the more force is required for lifting. In other words, lifting a heavy item would cause a greater chance of injury and it would be safer for us to keep the heavy item close to our body when lifting it. There are, however, chances that some lifting acts prevent the workers from keeping the items close to their bodies. In this case, workers are advised to observe the suggested weights that a person can lift in different regions apart from the body as shown in the diagram for prevention of injury:

註：此圖之數值祇適用於男性。對於女性，建議的數值應減少三分之一。

Note: The numbers shown in the diagram are applicable to male only. For female, the proposed numbers should be reduced by one third.

辦公室舒展運動 Office Stretching Exercises

辦公室人員長時間坐著工作，而需要使用顯示屏幕設備的人員更需長時間保持同一工作姿勢。為免出現肌肉疲勞或其他更嚴重的筋腱問題，除了定時小休之外，辦公室人員可進行以下舒展運動，以鬆弛身體各部位：

Sedentary workers keep sitting for a lengthy period of time in office. Those who work with display screen equipment are even required to work in the same posture for prolonged hours. To prevent muscle fatigue and other ligaments issues, sedentary workers are advised to take regular breaks and do the following stretching exercises for relaxation of different parts of the body:

1. 眼部運動 Eyes

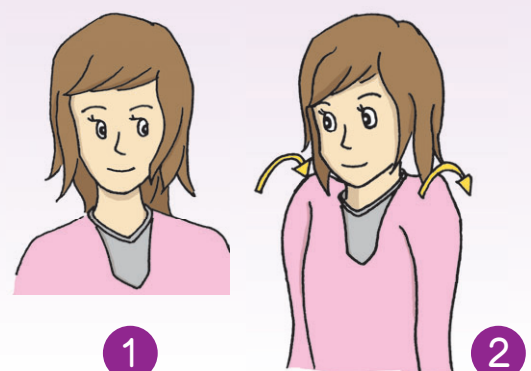
眼球順時針方向轉，分8個位置轉動，每個位置停3秒；然後逆時針方向轉，每個位置停3秒。

Rotate your eyeballs clockwise, pausing for 3 seconds at each of the 8 directions. Repeat the exercise in a counter clockwise direction.

2. 肩膀轉動 Shoulders

雙肩向前轉一圈，放鬆；然後向後轉一圈，放鬆。重複動作兩次。

Rotate your shoulders forward; relax. Rotate your shoulders backward; relax. Repeat this exercise twice.



1

2

3. 頸部伸展 Neck stretch

將頭側向左邊，停5秒；然後側向右邊，停5秒；最後，頭部向前傾，停5秒。重複動作兩次。注意：腰背須保持挺直。
Slowly tilt your head to the left without moving your trunk. Hold for 5 seconds. Then tilt your head to the right and hold for 5 seconds. Tilt your head forward and hold for 5 seconds. Repeat this exercise twice.

4. 前臂伸展 Forearms

左手向前伸直，手掌向上屈，右手輕輕捉住左手手指，輕力向後拗，停5秒；然後手掌向下屈，右手輕輕壓住左手背，停5秒。右手重複動作。左右手各做兩次。

Raise left arm and bend the wrist with fingers pointing up. Right hand folds the left fingers for 5 seconds. Then bend the wrist with fingers pointing down. Right hand holds the left fingers for 5 seconds. Do the same for the right hand. Repeat this exercise twice.

5. 腰背運動 Back

雙手互扣，盡量向上伸展，停5秒；向左伸展，停5秒；再向右伸展，停5秒。重複動作兩次。注意：腰向左右兩邊伸展時，緊貼坐椅。

Raise your arms up over your head with your hands clasped and your palms facing upwards. Hold this position for 5 seconds. Stretch to the left and to the right, pausing for 5 seconds at each side. Repeat this exercise twice. Note: keep your waist on the seat back during the side stretches.

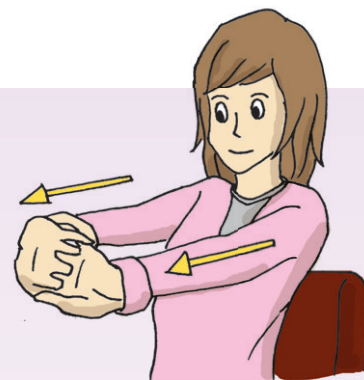
6. 提腿運動 Leg

身體坐直，緊貼椅背，將一條腿向前伸展，另一條腿平放，提起向前伸直的腿，停5秒，再放鬆；另一條腿重複動作。左右各做兩次。

Sit with your back straight. Raise one leg forward and keep another leg still. Hold this position for 5 seconds. Relax. Do the same for the other leg. Repeat this exercise twice.



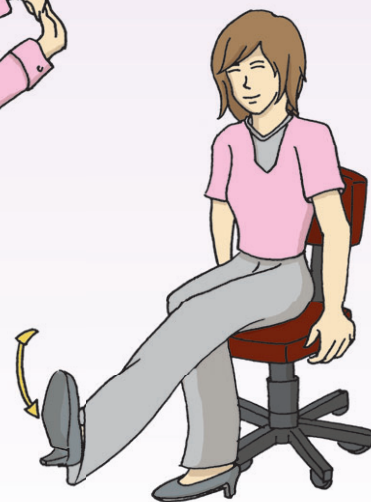
3



4



5



6

職安健訓練課程推介 OSH Training Courses

上文介紹了如何應用人體工效學以改善辦公室的職安健。職安局定期舉辦相關的訓練課程，詳情如下：

We have just gone through how ergonomics can be used to improve occupational safety and health in office. OSHC have the following training course (in Cantonese) that is related to this aspect:

辦公室人體功效學 Office Ergonomics (課程編號 Course Code : OFF)

課程內容 Highlights

1. 辦公室內有關人體功效學問題
Issues related to office ergonomics
2. 辦公室空間及工序的安排
Arrangement on office space and working procedure
3. 坐椅及辦公桌的設計
Design of work desk and chair
4. 終端機與操作者之配合
Matching of operator and display screen equipment
5. 光源的問題
Issue on lighting
6. 其他因素如噪音、辦公室氣溫、濕度、通風等問題
Other concern: noise, temperature, humidity, ventilation system, etc.

有興趣人士可致電 2311 3322 查詢。

For further information, please contact our OSH Training Centre at 2311 3322.

有獎 問答遊戲 Quiz

文職系安全及健康委員會於本通訊內續設了一個有獎問答遊戲，藉此來提高大家對工作安全的警覺性，希望讀者們踴躍參加，若能答中以下三條問題，便可參加抽獎，有機會獲得價值\$150購物禮券乙張，名額共5個。The Sedentary Workers Safety & Health Committee has included a prize quiz in this bulletin to help raise awareness of work safety. We look forward to your participation. If you can answer the following three questions correctly, you can enter the lucky draw and have an opportunity to receive one of a total of 5 shopping vouchers to the value of \$150.

- 1 下列哪項關於工作枱的特點不符合人體工效學的設計？
Which of the following characteristics of a workstation does not comply with ergonomic design?
A. 枱下應有足夠深度及闊度讓使用者舒適地放置雙腳
A work desk should allow sufficient space underneath for users' knees and legs to stretch freely.
B. 只須有足夠空間放置顯示屏幕設備的鍵盤及滑鼠便可，並不一定要預留足夠空間讓使用者操作它們
A desktop should only allow space for display screen equipment, keyboard and mouse and no need to preserve room for users' operation.
C. 高度應視乎使用者的身材及所需的工序
The height should be adjusted according to the user's body size and the working procedure.
- 2 一個理想的顯示屏幕設備工作間，應可容讓使用者眼睛與顯示屏幕保持多少距離？
What is the suitable distance range between a user's eyes and the display screen in a display screen equipment workstation?
A. 15 - 30厘米 cm
B. 35 - 60厘米 cm
C. 40 - 65厘米 cm
- 3 考慮到人體能力的限制，我們應避免徒手提舉重於多少公斤的物件，以免增加受傷的機會？
Considering the limits of human body, we should avoid to lift object that exists how many kilograms(kg) by bare hands, in order to reduce the chance of injury?
A. 16公斤 kg
B. 26公斤 kg
C. 36公斤 kg

請圈出正確答案及填妥下列表格，郵寄或傳真回本局總辦事處，信封面請註明「文職系安全健康通訊問答遊戲」。截止日期：2010年5月15日。Please circle the correct answers and fill in the following form and send it or fax it to the Council. Please write "Sedentary Workers Safety & Health Bulletin Prize Quiz" on the envelope. Closing date: 15 May, 2010.

姓名 Name : _____ 身份証號碼 Identity Card No. : _____

地址 Address : _____

日間聯絡電話 Daytime Contact Tel. No. : _____

參加細則

1. 每人只限參加一次。
2. 主辦機構之員工及其直系家屬均一律不得參加。
3. 得獎結果以主辦機構的決定為準。
4. 主辦機構保留更改有關是項活動事宜的權利，恕不另行通知。
5. 倘有任何爭議，一切以主辦機構的決定為最終決定。
6. 歡迎複印參加表格。

個人資料聲明

本局會保留閣下個人資料作推廣職業安全及健康之用，包括研究及統計。本局或需將資料轉予服務提供者、活動共同舉辦者和夥伴機構。若閣下不欲收到職業安全及健康訊息，請填寫此聲明末段所列方格。
 本人不欲收到上述訊息

Rules for Participation

1. Each participant may only enter once.
2. The employees and direct family members of the organising body are not eligible to enter.
3. The decision of the organising body regarding the prize results is final.
4. The organising body reserves the right to make changes to any matters related to the competition and will not provide further notice.
5. In the event of any dispute, all decisions by the organising body are final.
6. Welcome to photocopy the form.

Personal Data Statement

We will keep your personal data for promotion of safety and health at work, including related research and statistical purposes. We may need to transfer such data to service providers, event co-organizers and partner institutions. If you do not wish to receive information and news relating to safety and health at work from us, please mark the box at the end of this Statement.
 I do not wish to receive the aforesaid information and news

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中文姓名 Chi Name : _____ 英文姓名 Eng Name : _____

電話 Tel. No : _____ 傳真 Fax No : _____ 電子郵件 E-mail Address : _____

填妥後請將表格傳真至 2739 9779 職業安全健康局

Please fax the form to Occupational Safety and Health Council (Fax No. : 2739 9779)

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 本人不欲收到上述訊息

Personal Information Statement

The information provided would be kept for promoting safety and health, including research and statistics. The information may need to be passed to service providers, function co-organizer and partnerships. If you do not want to receive Occupational Safety and Health information. Please tick the box in the bottom of this statement.
 I do not want to receive the information stated above



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