

A Healthy Workplace



The Shift Worker's Handbook

Table of Contents

Introduction.....	1
Circadian rhythms	2
Sleep	5
Staying alert.....	12
Physical health	16
Emotional health.....	28
Conclusion	33
Resources.....	34
Appendix I: Healthy meal ideas.....	35

Introduction

Shift work is an essential part of today's business reality. To remain competitive, many companies find it necessary to operate continuously and provide services 24 hours a day. Society has embraced the 24/7 economy and, as a result, shift work is a reality of life for three out of every 10 employed Canadians and their families.

Shift work is often defined as work outside the hours of around 7 a.m. and 6 p.m.. Some workers enjoy shift work because it gives them time at home during the day to look after children and visit offices and banks that are generally closed in the evening. Unfortunately, many people also have trouble with shift work. This handbook explores some of the difficulties you may encounter while working shifts and offers suggestions on how to deal with them. The handbook addresses:

- Circadian rhythms and how they work and affect your sleeping and eating patterns.
- Sleep troubles and how to get a longer, deeper sleep.
- Fighting fatigue and how to stay alert.
- Physical health and how eating properly and staying physically fit can help to reduce the negative effects of shift work.
- Emotional and personal issues such as stress and how to balance family and social responsibilities with shift work.

Shift work can sometimes be a challenge, but adopting a healthy lifestyle and learning ways to improve sleep and work-life balance can make it much easier.

Did you know?

- Approximately three in 10 employed Canadians work non-standard hours (e.g. nights, evenings, rotational or irregular).
- Shift work is more common for individuals in blue-collar or sales and services occupations than for those in white-collar or clerical jobs.
- The most common complaint of shift workers is lack of sleep.
- Shift workers are more likely to be daily smokers than daytime workers.
- Some studies have shown that shift workers are more likely to drink heavily, eat poorly and have weight problems.

Source: Statistics Canada, Health Reports Vol. 13 No. 4, 2002

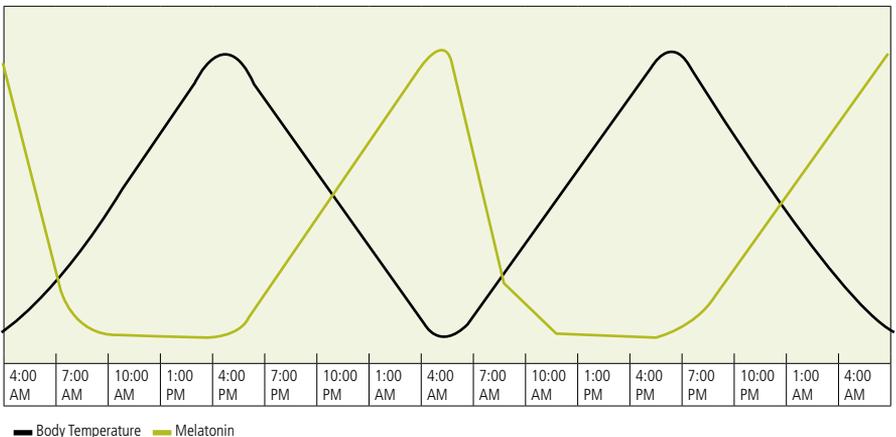
Circadian rhythms

Our bodies are constantly operating on a cycle. Sleeping, waking, digestion, secretion of adrenalin and hormones, body temperature and blood pressure run on a 24-hour loop and determine when our bodies are ready to eat, sleep and be active. This 24-hour cycle is called the circadian rhythm.

Our bodies are designed to be awake in the day and asleep at night. External cues from the environment, such as clocks and watches, daylight and darkness, and mealtimes, keep our biological clocks synchronized to the 24-hour rotation of the Earth. For people, the most important external synchronizers are daylight and social behaviour such as sleep and mealtimes.

Clearly, these rhythms are not ideal for night workers since their schedules run in opposition to our biological cycles. Fortunately, there are solutions to this problem and it is possible to adjust your body's circadian rhythms. In this chapter we will discuss how body rhythms work and what you can do to reset your biological clock in a way that works with your schedule.

As night approaches, a number of changes occur. Our breathing and heart rate slow down, blood pressure drops, digestion slows, urinary output decreases and, of course, body temperature decreases. This decline continues until it eventually reaches its trough at around 4 a.m. These changes happen so that the body can focus on the other "nighttime" tasks such as repair work, maintenance and memory consolidation. During the night, the hormones that keep us awake during the day are suppressed, while melatonin (the hormone that helps to regulate sleep) is released into the bloodstream.



Since a night worker's schedule disrupts the circadian rhythm, sleep and digestion problems can often occur. Luckily, the circadian rhythm can adjust to the body's new sleep/wake routine, especially if it remains consistent. It is common for a person who sleeps from 8 a.m. to 4 p.m. to function productively at work from 11 p.m. to 7 a.m. Circadian rhythms operate on a 24-hour cycle, so in non-fluctuating shift work, the shift in rhythm remains constant once the body adapts to it. Resynchronization may take a while, but it is possible.

Your body doesn't automatically know when it's day and when it's night. While the human body does have circadian rhythms that indicate when we should eat and sleep, these rhythms are dependent on Zeitgebers. Zeitgebers, which is the German word for timer, are hints that help the body determine the time of day. The biggest clues that your body receives are light and mealtimes. However, things like clocks, morning routines, temperature and social activities can act as Zeitgebers as well.

How to readjust your circadian rhythms

Light

Light is one of the biggest clues that your body should stay awake. Bright light suppresses melatonin, the hormone that regulates sleep. If you're working shifts make sure that you have a brightly lit work area and install black-out curtains or wear an eye mask while trying to sleep during the day.

Mealtimes

Maintain a regular meal schedule. If you work nights don't try to eat on the same schedule as a day worker. No matter what time you wake up, you should eat a nutritious breakfast to help you start your day, even if your day starts at 6 p.m.

Stick to your schedule

Your body cycles cannot reset and rebuild when circadian rhythms are frequently disrupted. Do not resume a normal daytime (diurnal) schedule on your days off, since this disrupts the adjustments that have already been made to your circadian rhythm. Your body will have to readjust again when you go back to work.

Most shift workers make slight adjustments to their schedule on their days off so they can spend more time with their family and friends. Try going to bed and waking up two to three hours earlier than you usually do so that you'll have the afternoon and evening to spend with the people who are important to you. As you approach the work week, start gradually going to sleep later so that your circadian rhythms will have an easier time adjusting when you go back to work.

Circadian rhythms: at a glance

Our bodies are designed to sleep at night and stay awake during the day. This can pose a challenge to shift workers who work late or very early hours, because digestion slows down at night and melatonin is released, which makes us feel sleepy. The body picks up on things such as light and mealtimes to determine what time it is and when it should sleep or stay awake. Fortunately, there are ways to adjust your circadian rhythms or biological clock to work with your schedule:

- Try to stay in well-lit areas when you are awake. When you sleep, use black-out curtains or an eye mask to keep things dark.
- Try to maintain a regular meal schedule.
- Don't completely change your schedule on your days off. Make some adjustments to your regular bedtime so that you can spend time with family and friends, but keep it within a few hours so you can adjust back to your work schedule easily.

Sleep

Due to their schedules, shift workers frequently have to sleep during the day. This is very difficult for some people, and night workers often struggle with falling asleep and staying asleep for long periods of time. In this chapter, we discuss why it can be difficult to get a good rest and suggest some strategies to help protect your valuable sleep.

Sleep stages

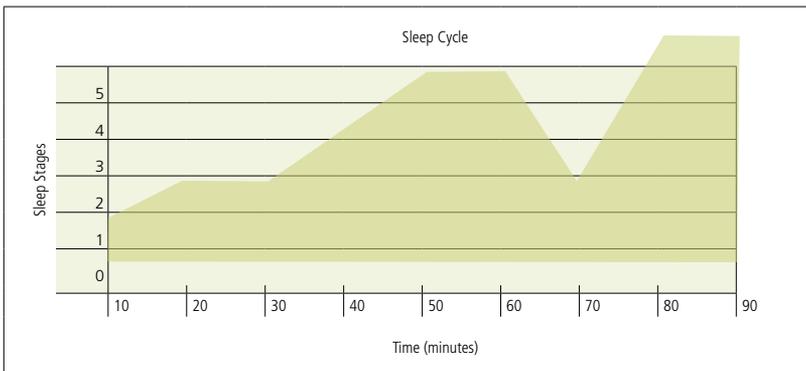
When we sleep, we go through sleep cycles that are made up of five different stages. In an eight-hour sleep period the average person will go through four or five sleep cycles each lasting 90 to 100 minutes. The five different sleep stages are:

Stage one: Falling asleep. This accounts for two to five per cent of our sleep.

Stage two: The light or “baseline” sleep that begins after falling asleep. After about 10 to 20 minutes, this light sleep evolves into “delta” sleep and later on into REM (Rapid Eye Movement) sleep.

Stage three and four or delta sleep: May last 15 to 30 minutes. This is the deepest stage of sleep and the most restorative. It is delta sleep that a sleep-deprived person's brain craves first and foremost.

Stage five: After completing stages three and four, you'll usually go back into a lighter stage-two sleep before going into your final sleep stage of the cycle. This stage is when REM sleep occurs and is also the time in our sleep cycle that we dream. REM is responsible for emotional rejuvenation, stimulation of brain growth, consolidation of memory, and the discharge of strong emotions, which would otherwise intrude into waking behaviour.



To get a good rest, your body needs to complete this sleep cycle several times a night. Keep this cycle in mind if you take naps. Try to keep naps less than 15 to 20 minutes (before you get into deep sleep in stages three and four) or in increments of 90 to 100 minutes so you complete an entire cycle.

Shift workers often don't get enough deep sleep. Since daytime sleep is usually lighter and there are more interruptions to wake you, it is often difficult for shift workers to remain asleep long enough to get to stages three, four and five. Each time you try to go back to sleep, the sleep cycle restarts at stage one. Without delta or REM sleep, you can wake up groggy, tired and irritable. It's important to help your body get to and stay asleep for prolonged periods of time, so you can wake up ready to start your day.

Sleep/wake cycle

The body's circadian rhythm determines when we should sleep and when we should be alert. Generally, our bodies are most alert in the afternoon and the most fatigued around 4 a.m. To adjust this cycle so that it's easier for you to sleep during the day, it's important to help your body by giving it clues that it should go to sleep. Remember that the body picks up on hints (Zeitgebers) such as light, temperature and sound so that it can detect what time it is. Adjust the following to help you get a better sleep:

Light

- Exposing your eyes to light suppresses the flow of melatonin (the sleep hormone) in the body.
- Avoid bright light as much as possible just before going to bed. Sleep in complete darkness by blocking out light in your room. Use a sleep mask, heavy drapes or cover your windows with black cardboard or aluminum foil.
- Wear sunglasses on your commute home unless you drive home and wearing sunglasses would be dangerous because it is still dark.

Temperature

- Keep the temperature in the room between 13 and 18 degrees Celsius while sleeping.

Sound

- Try to eliminate as much noise as possible.
- Use ear plugs, turn the phone ringer off and let your friends and family know that you can't be disturbed during your sleeping hours.
- Use "white noise" such as a fan, air conditioner, humidifier or soft music to help mask any sounds from outside.

External cues

- Avoid looking at your watch or listening to the morning radio programs if you are trying to get to sleep in the morning.

Schedule

Keeping a consistent schedule is one of the best ways to help your body adjust to your lifestyle. Frequent changes in schedule and disruption to circadian rhythms can lead to chronic fatigue. Try to go to bed at the same time every night and make a bedtime routine. This will help your body adjust to sleeping at irregular hours, even in the middle of the day.

While shift work generally becomes easier with time, some people never get used to working shifts since they completely revert back to a day schedule on their days off. Often friends and family will have the opposite schedule to yours, which can make it tempting to rearrange your sleep times. However, it is important to make sleep a priority. Work out a schedule with the people in your life and find out when your free time overlaps. You may have to alter your sleep and wake times a little, but try not to radically alter your schedule.

Lifestyle

There are several lifestyle choices that can make it easier for shift workers to get a good night's sleep.

Nutrition

- Keep a regular meal routine. This will help your body stay adjusted to your schedule.
- Eat healthily to avoid digestive discomfort that could keep you awake. Before bed, avoid foods that are high in fat because they are more difficult to digest. Stick to healthy foods that are rich in carbohydrates.
- Eat slowly and give your body time to digest food before going to sleep.
- Stay well hydrated, but limit fluids just before bedtime to avoid frequent trips to the bathroom.
- Eat the recommended amount of fibre. A diet rich in fibre will increase slow-wave sleep and help fight fatigue.
- Keep a light nutritious snack by your bed in case you wake up feeling hungry. Avoiding a trip to the kitchen might help you get back to sleep faster.

Exercise

- Get physically active. Regular exercise can help you fall asleep faster and stay asleep longer. It can also make daytime sleep more restful.
- Avoid exercise in the three hours before sleep. Exercise is an energizer and may keep you awake.

Smoking

- Don't smoke before bed. Nicotine is a powerful stimulant and keeps you in light-sleep stages longer.

Drugs and alcohol

Alcohol

Alcohol should not be used as a sleeping aid. While it might help you fall asleep faster, it will damage the quality of sleep you get. Drinking before bed can make sleep much lighter, so you might wake up in the middle of your rest.

Sleeping pills

Try your best to avoid taking sleeping pills. While prescription sleeping pills can help a person fall asleep and stay asleep, they can have negative consequences.

- It's easy to become dependent on sleeping pills.
- You can wake up feeling drowsy after taking them.
- You can build up a tolerance to the pills making them less and less effective.
- They do not give you a normal sleep and they won't reset your biological clock.

Non-prescription sleeping pills often contain the same drug used in allergy and sinus medicines. These pills can make you drowsy, but the effects usually last a long time, which means that you can wake up feeling drowsy. If used often (more than once or twice a week), your body can build up a tolerance and the sleeping pills will no longer be as effective.

Sleeping pills should be a last resort. A healthy lifestyle and a consistent schedule are usually enough to ensure that you get good sleep. However, if you are still having trouble falling asleep, make sure that you consult a doctor before taking any form of sleeping aid. Also, keep in mind that it is easy to become dependent on sleeping pills, so avoid using them regularly.

Naturopathic sleeping aids

Melatonin is a hormone produced naturally in the brain that helps you sleep. It is part of the sleep cycle and is controlled by light. Melatonin supplements are also available in health-food stores to act as a sleeping aid.

While Melatonin can help you sleep and adjust your circadian rhythms, it must be taken with caution, like any other sleeping aid, and should not be used without consulting your doctor. Supplements are available in various doses and more research needs to be done to understand how much melatonin is safe and if there are any long-term side effects.

Tryptophan is also produced in the body and helps to promote sleep. Supplements are available, but more research needs to be done to ensure the safety and effectiveness of taking Tryptophan regularly.

Remember that naturopathic medicines can have dangerous side effects similar to pharmaceutical drugs and can also interact with other medications. Talk with your doctor before taking any type of sleeping aid and be extra careful if you are pregnant or suffer from any disease or condition.

Relaxation

Take some time to relax before going to bed. Try to block out unpleasant thoughts and reduce stress through physical fitness and relaxation techniques. Try not to carry work stresses home with you and make sure that when you get into bed the only thing on your mind is relaxing and getting a good sleep. Don't read, eat, watch TV or write in bed. Avoid sleeping on the couch or in a recliner in front of the TV; if you associate your bed with restfulness, you'll find it easier to get to sleep. Also, make sure that you have a reliable alarm clock with a battery back-up so you won't worry about over-sleeping.

If you have trouble de-stressing, try some breathing or muscle relaxation techniques. Here's an exercise that might help you wind down before going to sleep:

- Lie down on the carpet or bed, or sit in an easy chair.
- Slowly tense each muscle group in your body one by one, and then slowly relax.
- Start with your toes and go all the way up through your legs, stomach, arms, hands, neck and face muscles.
- Try to visualize all the muscle tension draining away from your body.
- Breathe deeply during this exercise and go slowly.

Sleep: At a glance

Sleep factor	How it can affect your sleep
Light	Bright light suppresses the flow of melatonin, which helps you sleep. If you sleep during the day, do your best to block out sunlight by using an eye mask or black-out curtains so that you can sleep more easily.
Temperature	Keep your bedroom temperature at between 13 and 18 degrees Celsius while you are trying to sleep. If a room is too cold or too warm it will make it more difficult to fall and stay asleep.
Sound	Loud noise can make it difficult to sleep. If you are sleeping during the daytime consider using ear plugs, unplugging the phone, and asking your family or roommates to make an effort to keep the noise down.
Schedule	A consistent schedule will help your circadian rhythms adjust so you have an easier time sleeping, even during the day. Avoid switching completely to a day schedule on your days off and remember that a sleep routine can act as a cue for your body to prepare for sleep.
Nutrition	Poor eating habits can lead to digestive discomfort, which can make it difficult to sleep. Avoid fatty, hard-to-digest foods and eat slowly. Stick to a diet that is rich in carbohydrates and fibre. Consider keeping a light snack by your bed in case you wake up feeling hungry.
Fitness	Regular exercise can help you fall asleep faster and stay asleep longer. It can also make daytime sleep more restful. Avoid exercise in the three hours before bed though because physical activity can be an energizer.
Smoking	Nicotine is a stimulant; avoid smoking before bed.
Alcohol	Drinking can help you get to sleep, but it will make your sleep lighter and less refreshing. Alcohol also dehydrates you.

Sleeping pills	Prescription sleeping aids can help you get to sleep and stay asleep, but they have several negative side effects. It is easy to become dependent and to build up a tolerance. The pills can also make you feel drowsy when you wake up. Non-prescription sleeping pills can also leave you feeling drowsy. Regular users also build up a tolerance, making the pills less effective.
Naturopathic sleeping aids	Naturopathic drugs such as melatonin and tryptophan do help some people sleep. However, there is not a sufficient amount of medical evidence to prove their level of effectiveness and safety. As with any drugs, you should speak with a doctor before taking these supplements.
Relaxation	Relaxing before bed can help you fall asleep faster. Try to make your bedroom a place that you associate with rest. If you are stressed out and having trouble winding down try a relaxation or breathing exercise.

Staying alert

Staying alert during the night can be just as challenging as getting to sleep during the day. Late in the afternoon, body temperature begins to drop and reaches its lowest point between 3 a.m. and 6 a.m. The best way to stay alert at night is to get a good sleep during the day. You can also energize yourself at night with bright lights and well-timed naps. Also, remember that, much like sleeping, staying alert will be easier if you have a healthy lifestyle. Exercise regularly, eat healthily and avoid stimulant drugs such as caffeine and amphetamines.

Bright light

As discussed in the previous chapter, light can help your body adjust to an alternative sleep schedule. Melatonin is a hormone that promotes sleep and bright light can reduce the amount that is produced in the brain making it easier for you to remain alert during the night. For this strategy to be the most effective, you also need to spend a significant amount of time in low light or darkness during the day, so that your circadian rhythm can adjust. This is why it's important to work in a well-lit area, while keeping your bedroom as dark as possible.

Sleep loss

Clearly, sleep loss is a major cause of fatigue. If you are unable to sleep or do not get enough sleep, the chances are that you will have trouble staying awake and alert when you need to. Sleep loss might cause you to fall asleep at inappropriate times or doze off for a few seconds when you don't even realize it. Protect your sleep and make sure that you are getting enough. If sleep is an issue for you, review the previous section and learn some strategies to improve the quality and quantity of your rest.

Naps

Napping can be very effective at fighting sleepiness; however, napping should not replace regular sleep. Remember that your body needs to sleep for prolonged periods of time to go through all of the necessary sleep stages and leave you refreshed. Here are some suggestions for how to nap well:

- If you nap, allow enough time for drowsiness to wear off before starting work.
- Time short naps carefully. If your nap is too short (under 15 minutes) it can actually leave you feeling less refreshed than you were before. Keep short naps between 15 and 30 minutes.

- Keep longer naps in increments of 90 minutes. It takes the body approximately 90 to 100 minutes to complete a sleep cycle. If you sleep for only 45 minutes or an hour you will be interrupting slow-wave sleep, which can leave you feeling groggy and un-refreshed.

Lifestyle

Making the right lifestyle choices can affect how well your body adjusts to working shifts. Eating healthily and getting regular exercise can help you to sleep better and be more alert when you're awake.

- Get physically active for at least 30 minutes every day. Not only will you sleep better, but exercise can also act as a great energizer. Twenty minutes of aerobic exercise before work (a brisk walk, bike ride, jog or swim) is enough to help any worker wake up and get going, and also keep the heart in shape.
- Eat lots of small meals and snacks. By eating in smaller quantities more often, you will diminish digestive problems and have an easier time keeping up your energy levels.
- Avoid junk food. Sugars, sweets and highly-refined or processed foods, such as chocolate bars and candy snacks, are metabolized quickly. For about an hour they can increase alertness, but this "high" is short-lived and the fatigue that follows is often worse than before you ate the snack.
- Choose complex carbohydrates, such as fruits, vegetables and nuts, and protein such as lean meat, poultry and fish. These foods are metabolized more slowly and promote alertness.
- Drink at least two litres of water a day. Lack of water can result in thirst headaches and fatigue. A refreshing glass of water can also help to wake you up when you are feeling drowsy.

Caffeine and other stimulants

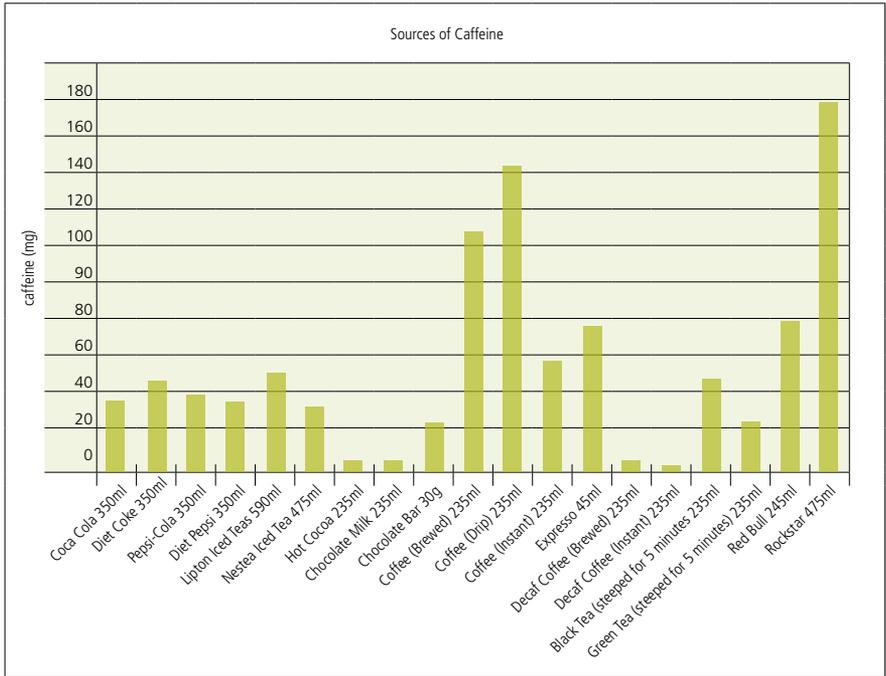
Amphetamines, diet pills and "uppers"

These types of drugs are very strong stimulants that increase alertness and can eliminate sleep altogether. They are often very addictive and it's easy to become dependent on them. A person might end up needing them every day just to get going. The side effects of frequent use vary from extreme nervousness to mood changes. These drugs are very dangerous (and sometimes illegal) and should be avoided.

Caffeine

Caffeine is a stimulant used more than any other drug to maintain alertness and fight off sleepiness. In moderation, caffeine is a fairly safe substance, but it is addictive and too much can aggravate digestive problems. Caffeine can also make sleep lighter and less satisfying.

You should not consume more than two or three caffeinated beverages a day and it is important to note that it takes 10 hours to clear 80 mg of caffeine from your system. Caffeine should be avoided within at least four hours of going to bed, and remember that there are many sources of caffeine.



If you currently drink a lot of caffeine, try to cut down gradually. Decrease your caffeine intake by 1/2 to one cup every few days. Cutting down too fast can make you feel irritable and cause headaches and nervousness.

Getting home safely

It is crucial that you be alert on your drive home. Driving while tired can be very dangerous for you and other people on the road with you. If you find that you tend to be sleepy on your way home, try some of these solutions:

- Drive with a buddy or carpool so that you can be a passenger if you are very tired and, if you are the driver, you'll have company to keep you alert.
- Listen to an interesting radio show or upbeat music.
- Roll down the window. The cool breeze will help you stay alert.
- Take public transportation and you won't have to worry about falling asleep on the way home. Just make sure to set a watch or cell-phone alarm so you don't miss your stop.

Staying alert: At a glance

Tricks to staying alert	How it can help
Bright light	Light suppresses melatonin, a hormone that helps you sleep.
Well-scheduled naps	If you are feeling tired, a nap can give you a boost of energy. Just make sure that your naps are 15 to 30 minutes long or in 90-minute increments so that you don't interrupt deep sleep. Interrupting deep sleep can make you more tired than you were before.
Getting a good sleep	If you don't get enough sleep, you will have a difficult time staying awake and alert. By getting a good sleep, you can wake up refreshed and ready to start your day. See the previous section (<i>Sleep</i>) for suggestions on how to improve your sleep.
Eat healthy meals	Eating small, healthy meals throughout your day will help you keep up your energy levels. Choose to eat complex carbohydrates and protein, and avoid heavy fatty meals that are hard to digest and can make you feel sluggish.
Exercise	Exercise is a great energizer. Regular physical exercise will also help you get a better sleep.

Physical health

Physical health is very important. Eating right and staying physically active are the foundation to attaining and maintaining a healthy body. Leading a healthy lifestyle will increase your energy levels and decrease your chances of developing a serious chronic illness. Shift workers have even more to gain because regular exercise can improve the quality of sleep and eating well can eliminate digestive disorders. This section provides tips on how to keep your body in shape and shows how easy it can be to stay healthy while working shifts.

Gastrointestinal and digestive problems

Gastrointestinal and digestive problems, such as indigestion, heartburn, stomach ache, loss of appetite and ulcers, are often caused by poor lifestyle choices and the timing of meals. These problems can be aggravated by:

- Overeating. Some shift workers consume nighttime snacks in addition to regular daytime meals.
- Eating less nutritious foods. Often, there is limited access to nutritious meals at night and workers might rely on snack foods with a high fat content.
- Drinking lots of coffee. Heavy coffee consumption increases the risk of developing ulcers.

It's important to maintain a healthy diet at the best of times and especially when the body is also coping with an irregular schedule. It is also important to understand that the foods we eat help to determine how well we sleep and how well we are able to perform our work. Smaller meals not only help to keep your body's sugar levels more even, but also help with digestion.

Enjoy a variety of healthy food and avoid the junk. Sugars, sweets and highly-refined or processed foods, such as chocolate bars and candy snacks, are metabolized quickly and give you increased alertness for about an hour. However, the "high" is short-lived and the fatigue that follows is often worse than before you ate the snack. Instead, choose complex carbohydrates, such as vegetables and whole grain bread products, and proteins because these types of foods are metabolized slowly and promote alertness. Avoid high-fat foods whenever possible because fat is harder to digest and tends to stay in the stomach longer.

The effects of drugs and alcohol

Tobacco, alcohol and caffeine negatively affect our ability to digest and eliminate food and can also harm the quality of our sleep. It's important to limit use of these substances and be aware of the effects they have on the body.

Tobacco

It's well known that smoking is a dangerous habit that is extremely damaging to your health and, because nicotine is a stimulant, it can also harm your sleep.

There is strong medical evidence that smoking tobacco is related to more than two dozen diseases and conditions, including lung, mouth and throat cancer, respiratory disease and cardiovascular disease. Smoking tobacco has negative effects on nearly every body organ, reduces overall health and remains the leading cause of preventable death in people of all ages.

Source: Smoking and Your Body, Health Canada, (Nov. 6, 2005) Reproduced with the permission of the Minister of Public Works and Government Services Canada, 2007.

Caffeine

Many of us use caffeine to stay alert. Particularly at the start of the day, a cup of coffee or tea can be beneficial, but caffeine should be consumed in small quantities. Consuming too much caffeine not only makes it difficult to fall asleep, but is also addictive and exacerbates digestive problems. For more information on caffeine, refer to the *Staying Alert* section of this booklet.

Alcohol

As well as damaging sleep, heavy drinking has been associated with chronic illnesses such as cancer and cardiovascular disease. Avoid alcohol for one to two hours before sleep, especially if you have to go to work immediately after waking up. Also, drink plenty of water when consuming alcohol because it dehydrates the body.

Prescription drugs

If you are taking prescription drugs, it's important to speak with your doctor or pharmacist about when you should take your medication. If you are switching shifts or working nights for the first time, make sure that you speak with a health-care professional about when to take your medication, because the timing might differ from your previous work shift. This is especially important if you have diabetes, since the timing of meals needs to be scheduled with when you take your medication.

Physical activity improves health and well-being by reducing stress, strengthening the heart and lungs, increasing energy levels, helping you maintain and achieve a healthy body weight and improving your outlook on life. Research shows that physical inactivity can lead to premature death, chronic disease and disability.

Source: Physical Activity, Health Canada, (Feb. 5, 2007) Reproduced with the permission of the Minister of Public Works and Government Services Canada, 2007.

Fitness

Regular exercise can make daytime sleep more restful and help your body make the transition from day to night work. Physical activity, such as walking, biking, swimming and aerobics, three or four times a week can help you fall asleep faster and stay asleep longer. Exercise can also help you to stay alert when you're working.

Unfortunately, some shift workers find it difficult to make exercise a regular part of their routine. Working shifts can leave you feeling too tired to go for a run or a workout at the gym, and night workers might find it difficult to find facilities with exercise classes and equipment open during hours convenient for them. Luckily, there are many ways for you to stay fit even while working irregular shifts.

Tips for staying active when time is a factor:

- Walk whenever you can. Park a few blocks away from work or plan to get off the bus a couple of stops before your workplace and walk the rest of the way.
- Make time for stretching. During your breaks, stretch and bend for a few minutes every hour.
- Don't just sit there. Contract your stomach muscles while sitting in a chair or on the bus.
- Go for a brisk walk before your meal break.
- See if there's a 24-hour gym open near your home or workplace.

Keep in mind that time spent with your friends and family can be a great opportunity to get some exercise. There are many ways to spend quality time with the people who are important to you, and be active at the same time:

- Go for a walk with your family.

- Play a game of pick-up football, soccer, baseball or any other sport that your family and friends can also enjoy.
- Join a recreational sports team or league.
- Take a dance class with your partner or some friends.
- Go on a biking, hiking or skiing excursion.
- Go tobogganing with your kids.

Remember, just 30 minutes of exercise a day can make a difference. So, stick with it and make regular exercise part of your daily routine.

Nutrition

As we've already discussed, proper nutrition is important to preventing gastrointestinal and digestive disorders. Eating well can also prevent chronic illness and help you feel more energized and alert. It's important to follow *Canada's Food Guide* and make balanced nutrition choices throughout the day.

The four food groups

According to *Canada's Food Guide*, every day you should be eating:

- Five to 12 grain products, such as bread, rice, pasta and cereal.
- Five to 10 vegetable and fruit servings, such as apples, tomatoes, broccoli and carrots.
- Two to four milk products or alternatives, such as yogurt, cheese and milk or a soy beverage.
- Two to three meat products or alternatives, such as fish, poultry, eggs, peanut butter, lentils and tofu.

It's important to eat foods from all four groups and control the size of your portions.

Each example below is equal to one food-guide serving:

Vegetables and fruit

- 125 ml (1/2 cup) fresh, frozen or canned vegetable or fruit or 100% juice
- 250ml (one cup) leafy raw vegetables or salad
- One piece of fruit

Grain products

- One slice (35 g) bread or 1/2 a bagel (45 g)
- 1/2 pita (35 g) or 1/2 tortilla (35 g)
- 125 ml (1/2 cup) cooked rice, pasta or couscous
- 30 g cold cereal or 175 ml (3/4 cup) hot cereal

Milk and alternatives

- 250 ml (one cup) milk or fortified soy beverage
- 175 g (3/4 cup) yogurt
- 50 g (1 1/2 oz.) cheese

Meat and alternatives

- 75 g (2 1/2 oz) /125 ml (1/2 cup) cooked fish, shellfish, poultry or lean meat
- 175 ml (3/4 cup) cooked beans
- Two eggs
- 30 ml (two tbsp) peanut butter (**Health Canada**)

Source: What is a Food Guide Serving? Health Canada, (Feb. 5, 2007) & Reproduced with the permission of the Minister of Public Works and Government Services Canada, 2007.

For a sample menu that follows *Canada's Food Guide*, please see Appendix I.

Fibre

Fibre is an important part of a healthy diet. Eating the recommended amount of fibre lowers your chance of developing chronic diseases, can improve your quality of sleep, increases slow-wave sleep and helps to fight fatigue. Unfortunately, very few of us get the 20 to 50 grams of fibre that the average adult needs every day. The average day worker eats 11 grams of fibre daily, and the average shift worker consumes only seven grams. Try to get your recommended amount by including some of these fibre-rich foods in your diet:

Food		Portion	Dietary fibre (grams)
Fruits	Apple	One medium	2.9
	Orange	One medium	2.0
	Banana	One medium	2.0
Vegetables	Broccoli	One stalk	2.7

Food		Portion	Dietary fibre (grams)
	Carrots	One large	2.9
	Tomato	One small	0.8
	Potato	One medium	1.8
	Corn	2/3 cup	1.6
Grains	All-Bran	½ cup	9.0
	Oat Bran	½ cup	4.4
	Cornflakes	One cup	0.5
	Rolled Oats	¾ cup cooked	3.0
	Whole wheat bread	One slice	1.4
	White bread	One slice	0.4
	Macaroni	One cup cooked	0.8
Legumes	Green peas	2/3 cup cooked	3.9
	Kidney beans	½ cup cooked	6.5
	Pinto beans	½ cup cooked	5.9
	Lentils	2/3 cup cooked	4.5

Source: *The Challenges of Shift Work*, University of Saskatchewan

Foods to limit

A healthy diet means limiting foods that are high in fat and calories. Junk food is often filled with empty calories that have little nutritional value and can contribute to digestive problems.

Examples of foods and beverages that are often high in calories, fat, sugar or salt (sodium) are:

- Cakes and pastries
- Cookies and granola bars
- Ice cream and frozen desserts
- Chocolate and candies
- Doughnuts and muffins
- French fries
- Nachos
- Potato chips
- Alcohol
- Fruit-flavoured drinks
- Soft drinks
- Sports and energy drinks
- Sweetened hot or cold drinks

*Ideas for healthy alternatives:***Cakes and pastries**

Try fruit with yogurt, a baked apple with cinnamon or graham crackers to satisfy your sweet tooth.

Cookies and granola bars

Try plain popcorn with a sprinkling of herbs.

Ice cream and frozen desserts

Try freezing yogurt in a popsicle tray.

Doughnuts

Try making your own high-fibre, low-fat muffins or bagels.

French fries

Try baking strips of potato or sweet potato in the oven with a small amount of oil and herbs and spices.

Nachos

Use a small amount of cheese (1½ oz.) and melt it on rye crisps or homemade baked pitas. Count this toward your recommended number of food-guide servings of grain products and meat and alternatives.

Potato chips

Choose plain popcorn or homemade baked pitas.

Fruit-flavoured drinks

Add lemon, lime or cucumber to your water or choose milk, fortified soy beverage or 100 per cent juice.

Sports and energy drinks

Drink water instead.

*If you want something:***Salty**

Try adding garlic or herbs.

Crunchy

Have some plain popcorn, vegetable sticks or breadsticks with hummus.

Creamy

Have a bowl of low-fat yogurt.

Sweet

Try a fruit salad.

Thirst

Drink water with a wedge of lemon or lime.

Source: Foods to Limit, Health Canada, (Feb. 5, 2007) 8 Reproduced with the permission of the Minister of Public Works and Government Services Canada, 2007.

Scheduling your meals

When working shifts, it's important to time your meals carefully to ensure that you won't get too hungry when sleeping during the day and that digestive discomfort will be less likely. Afternoon workers should have their main meal in the middle of the day instead of the middle of the work shift. Night workers, on the other hand, should eat lightly throughout the shift and have a moderate breakfast.

Eating for energy

A healthy diet, with regular meals and snacks, provides steady energy throughout the day, reduces the chance of illness or injury, and generally makes you feel better about all aspects of your life. For people with "on-the-go" jobs, a nutritious diet can be hard to achieve. However, with a little planning, it might not be as hard as you think.

Here are a few ideas to help keep your energy levels steady throughout your workday:

- Be sure to start your day with breakfast. After sleeping all night (or day) your blood sugar is low and your energy stores are depleted. Having breakfast gets your metabolism going right away, which helps with long-term weight maintenance.
- Lunches can be quick, portable and nutritious. Bringing your lunch not only saves you money, but can also make it easier to control what you eat, especially fat and sodium, which are found in much greater quantities in restaurant food. Try to eat lunch approximately four hours after breakfast to keep energy levels up.
- Snacking can prevent over-eating at main meals and help keep energy levels steady. Many portable snacks are easy to prepare and bringing your own means not stopping by a convenience store or the vending machine, saving you money and calories.
- Drink lots of fluids, especially water, throughout your shift. Fatigue is a symptom of dehydration, so carry a water bottle with you, if possible.
- Eat in small portions and keep a regular eating schedule to help your digestion and make it easier for you to get to and stay asleep.
- Relax during meals and allow time for digestion.
- Keep a small snack, such as crackers or carrot sticks, beside your bed in case you wake up hungry during the day. You might be able to fall back to sleep more easily if you avoid a trip to the kitchen.
- Eat lightly between 10 p.m. and 6 a.m. Avoid full meals and never eat a large meal before going to bed. For energy on the night shift, eat foods that are high in carbohydrates and protein, but low in sugar and fat.

Preparing easy and healthy meals

Time is valuable and it's often tempting to head to the drive-through on the way home from work instead of preparing a healthy meal. However, it is possible to prepare meals from scratch easily and affordably.

Health Canada suggests the following four easy planning tips:

1. Menu plan: Use a piece of paper, calendar or a menu planner to jot down your meal ideas.
2. Grocery list: Write down the foods you need for the next few days or week.
3. Go shopping: Buy the foods on your grocery list.
4. Start cooking: If you live with others, post your meal plan on the fridge so that whoever gets home first can start the meal.

Use the following checklist to make sure that you're planning balanced, healthy meals:

- Eat at least one dark green and one orange vegetable each day.
- Choose vegetables and fruit with little or no added fat, sugar or salt.
- Have vegetables and fruit more often than juice.
- Ensure that at least half of your grain products you eat each day are made up of whole grain foods.
- Choose grain products that are lower in fat, sugar and salt.
- Drink skim, one-per-cent or two-per-cent milk each day. If you do not drink milk, try a fortified soy beverage instead.
- Select lower-fat milk alternatives.
- Have meat alternatives such as beans, lentils and tofu often.
- Choose at least two food-guide servings of fish each week.
- Select lean meat and alternatives prepared with little or no added fat or salt.
- Include a small amount of unsaturated fat each day.
- Satisfy your thirst with water.
- Limit foods and beverages high in calories, fat, sugar or salt.

Source: *Planning Meals*, Health Canada, (Feb. 5, 2007) 8 Reproduced with the permission of the Minister of Public Works and

Grocery-shopping tips:

- Make a list before you head to the store and stick to it so that you won't be tempted to buy unhealthy food or waste money on impulse purchases.
- If time is a factor, think about buying ready-to-use ingredients such as pre-washed mixed salads, pre-cut stir-fry meats, fresh and frozen vegetables, grated cheese, skinless boneless chicken, fresh pasta and canned beans.
- Buy vegetables and fruit fresh when they are in season and freeze extras for later.
- Stock up on canned goods and staples when they are on sale. Store them safely and use them up by the "best-before" date.

For healthy and easy meal ideas and recipes, please refer to Appendix I.

Physical health: At a glance

How can I find time to:

Health factors	The effect on your body
Exercise regularly	<ul style="list-style-type: none"> • Incorporate exercise into your daily routine. Get off the bus a couple of stops early or bike to work. • Stretch often. • Contract your stomach muscles while sitting in a chair or on the bus. • Get active with your friends and family. Play with your kids, take dance classes or join a sports league.
Eat healthily	<ul style="list-style-type: none"> • Bring easy, but healthy, snacks such as carrot sticks, crackers and yogurt to work. • While preparing meals follow Health Canada's Easy Planning Tips: <ul style="list-style-type: none"> – Grocery list. – Menu plan. – Go shopping. • Start cooking. Use the <i>Canada Food Guide</i> checklist in Appendix I to make sure that you're planning balanced, healthy meals. • Buy healthy, ready-to-use ingredients such as pre-cut stir-fry meats, fresh and frozen vegetables, skinless boneless chicken and canned beans.

How to live a healthy life

Health factors	The effect on your body
Smoking	Smoking tobacco has been linked with more than two dozen diseases and conditions, including lung, mouth and throat cancer, respiratory disease and cardiovascular disease. Smoking is also the leading cause of preventable death, has negative health effects on people of all ages, and also has a negative effect on sleep.
Alcohol	Heavy drinking has been associated with chronic illnesses such as cancer and cardiovascular disease. Drinking alcohol before you go to bed will also damage the quality of your sleep.
Caffeine	Too much caffeine can aggravate digestive problems and make it more difficult to sleep.
Exercise	<p>Exercising regularly will:</p> <ul style="list-style-type: none"> • Improve your overall health and well-being. • Reduce stress. • Make daytime sleep more restful. • Strengthen the heart and lungs. • Increase energy levels. • Help you achieve and maintain a healthy body weight. • Decrease your chances of premature death, chronic disease and disability. • Help your body make the transition from day to night work.

Health factors	The effect on your body
Healthy eating	<p>Following a healthy, well-balanced diet will prevent gastrointestinal and digestive disorders and chronic illness.</p> <p>Eating the recommended amount of fibre can increase slow-wave sleep and help to fight fatigue.</p> <p>The timing of meals is very important. Eating small healthy meals throughout the day will help you to maintain energy while large greasy meals will make you feel tired and sluggish. Eating large amounts before bed will also make it difficult to sleep because the food will be hard to digest.</p>

Emotional health

Since shift work often takes place outside the “normal” workday, shift workers sometimes have trouble maintaining a happy social and family life. Sleep troubles can make you irritable and too tired to participate in social events, and your late or early hours can make it difficult to coordinate your schedule with the important people in your life. However, it is possible to avoid stress and keep a happy personal life while working shifts although it might require a little extra planning and effort on your part.

Stress

When you are overtired, it's easy to become irritable, impatient, anxious and stressed out, which can have a negative effect on your personal life. Often, shift workers put off sleep or revert back to a day schedule on their days off, so that they can spend time with family and friends. While this is understandable, it is important to remember that fatigue can harm your mood and mental well-being, and that juggling a shift schedule along with your personal life can increase your stress levels. Here are some tips for reducing stress and making sure you are well rested:

- Protect your sleep. Everyone knows that it's easy to get grumpy when you're overtired. It might be tempting to reduce your sleep so that you can spend more time with friends and family, but it won't be worth it if you're overtired and irritable.
- Eat nutritious meals and exercise regularly. Besides the benefits this will have on your sleep, living healthily makes you feel better and exercise is a great way to relieve stress.
- Try a relaxation or breathing exercise.
- Communicate with the people in your life. Make sure your family and friends understand how important your sleep is so that they can help you get the undisturbed rest you need.

Personal life

It's important to make time for yourself and the things that are important to you. Take leisure seriously and ensure that you keep up hobbies and other interests. If you are a religious or spiritual person, try to ensure that you work this into your schedule outside of work.

Don't let yourself become isolated just because you work shifts. Some people find it difficult to maintain friendships and meet new friends because of their schedules, especially if they work nights, but there are several things that can be done to ensure a satisfying social life even if you do work outside the regular nine to five.

- Make friends at work. Consider socializing with co-workers who already work the same schedule as you do.
- Join a health club or sports league that meets at a time that works with your schedule. You'll meet new people and get some exercise.
- Get organized. If you're having difficulty finding time to get together with your friends, plan things in advance. Give your friends a copy of your schedule, find out when they are usually free and see where your schedules match up.
- Volunteer in your community. There are opportunities available at a variety of times.
- Talk with other people who work shifts about how they balance their social and work lives. See if they have any suggestions that could be helpful to you.

Family life

Shift work can make it particularly challenging to balance work with family responsibilities, especially if you have children. When working shifts, it's especially important to be organized and plan activities and family time in advance. Get everyone in your family to make a schedule and post it on the fridge or in another communal area. This will enable you to coordinate your days and nights and figure out when everyone is available to spend time together. A schedule can also be helpful for distributing chores and coordinating child care.

Shift workers with partners

If you and your partner work opposite shifts, be careful not to be like ships that pass in the night. It is possible to stay connected even though it might require some extra effort and you may not be able to spend as much time together as you would like. Here are some tips that can make your relationship easier even when you're working opposite shifts:

Share the chores. Don't allow one person to do the lion's share of the housework. Make a schedule and try to divide tasks up evenly to avoid confrontations.

Make sure that you touch base daily. Even if you are on completely opposing schedules, make time for at least one meal together and/or a daily phone call so that you can keep the lines of communication open.

Set time aside for just you and your partner. One-on-one time is very important, so turn off the TV, hire a babysitter and do whatever else you need to do to have some alone time every now and then.

Children and shift work

One of the main challenges of shift work for people with children is finding quality child care. It can be very difficult to find daycare that is open later than 5 or 6 p.m., and most babysitters are not available overnight. Some shift workers can turn to a neighbour or family member for help; however, many people find it best to use a daycare service or hire a babysitter. There are three important steps to finding a child-care provider:

Step one: Recognizing your needs

- What location would work best (close to the child's school, your home or your work, etc.)?
- How many children need care?
- During what hours will your children need care?
- What fee can you afford?
- Do you qualify for any financial assistance or subsidies?

Keep these questions in mind while looking for child care.

Step two: Research

- Ask your friends, family and co-workers, especially ones who work similar shifts, for referrals.
- Consult community organizations, newspaper ads and public-health departments.
- Compile a list of potential child-care providers from your research.

Step three: Visit and interview

- Visit all the locations you are considering and look for a child-care provider that:
 - Provides a safe environment.
 - Is educated in child safety and first aid.
 - Offers a sanitary, healthy environment.
 - Understands the individual needs of children and provides a wide range of activities.
 - Serves nutritious meals and snacks.
 - Provides individual attention and nurturing.
- Bring a checklist and use it to compare potential caregivers.
- If you are looking at a daycare, make sure that you meet with the director or supervisor of the centre.

- If you are hiring a babysitter, or planning to use a daycare run out of someone's house, hold interviews.
- Make sure that you ask for and call their references.

While working nights isn't ideal if you have children, there are advantages. If you and your partner work opposite shifts you might be able to reduce the amount of time your kids would otherwise spend in daycare or with a babysitter. Also, you might occasionally be able to take advantage of daytime activities with your kids, such as accompanying them on a school field trip.

Do your best to schedule as much time together as possible and make sure to have at least one family meal together a day. If dinner is too difficult to coordinate then try and have breakfast together as a family. Remember that your family needs to be aware of your schedule and your sleep and nutrition needs throughout the day and night. Communicate with them and work together to find solutions that enable you to make your schedules work together.

Emotional health: At a glance

Personal challenge	Suggestions
Stress, irritability, impatience or anxiety	<ul style="list-style-type: none"> • Protect your sleep. Refer back to the section on <i>Sleep</i> and make sure that you do everything possible to get a good sleep. Loss of sleep can have a negative effect on your mood. • Eating well and exercising will help you sleep as well as improve your general health and well-being. Exercise is also an excellent stress reliever. • Try relaxation or breathing exercises. • Communicate your feelings to the important people in your life.
Trouble maintaining an active social life	<ul style="list-style-type: none"> • Make an effort to meet friends at work, particularly those who work the same shift as you. • Join a club or sports team that meets at a time that works with your schedule. • Volunteer. • Plan social activities well in advance. Let your friends know your schedule and find out theirs to make it easier to find times when you are all available.

Personal challenge	Suggestions
Problems with your partner	<ul style="list-style-type: none"> • Share household chores to ensure that no one is being over-burdened with work. • Try to touch base at least once a day so you can stay connected and keep the lines of communication open. • Set aside time when the two of you can be alone.
Balancing family and kids with your job	<ul style="list-style-type: none"> • Schedule at least one meal a day together. • Get every member of your family to make a copy of their schedule to help you keep track of everyone and determine when you can schedule family activities. • Take advantage of your free days to do family-related things such as supervising your child's field trip.
Finding adequate child care	<ul style="list-style-type: none"> • Consider using a family member or neighbour, if available, to babysit. • If you are hiring outside help make sure that you select your child-care provider carefully by: <ol style="list-style-type: none"> 1) Recognizing your needs (what time do you require care, what locations work for you, etc.). 2) Researching a variety of facilities. 3) Visiting each location and interviewing potential sitters. Make sure you ask for and check references.

Conclusion

Shift work is a challenge but, as this handbook suggests, adjustments in your lifestyle can make it easier. Remember that keeping yourself healthy is one of the best things you can do, regardless of your shift. Eating well and getting regular exercise will help you sleep better and metabolize foods more easily, and have a positive influence on your personal life because you will have more energy to participate in activities outside of work.

Keep lines of communication open with family and friends, and take time to coordinate your schedules so that you are able to stay connected with the people who are most important to you.

Also, keep in mind that you need to help your body adjust to staying awake and alert at irregular hours. Use light and mealtimes as cues to help your body adjust its circadian rhythms, and do your best to keep a regular schedule, even on your days off.

If you need additional help coping with shift work or if you are interested in learning more, check out the following resources:

Canada Post's Employee Assistance Program (EAP)

Provided by Shepell fgi, Canada Post's EAP program is a great resource if you need assistance. You can find information about the program on Intrapost. From the homepage, look under You at Canada Post/Employee Assistance (EAP). Shepell fgi counselors are qualified to help you with anything from quitting smoking and losing weight to how to find child care that works with your schedule. To speak with a representative, call: 1-866-565-4903 (TTY 1-877-338-0275).

Resources:

Canadian Centre for Occupational Health and Safety

<http://www.ccohs.ca/oshanswers/ergonomics/shiftwrk.html>

Occupational Health Clinics for Ontario Workers Inc.

<http://www.ohcow.on.ca/resources/handbooks/shiftwork/shiftwork.pdf>

National Institute for Occupational Safety and Health (NIOSH)

<http://www.cdc.gov/NIOSH/PDFS/97-145.PDF>

Physical Activity. Health Canada.

http://hc-sc.gc.ca/hl-vs/physactiv/index_e.html

Smoking and Your Body. Health Canada.

http://www.hc-sc.gc.ca/hl-vs/tobac-tabac/body-corps/index_e.html

Eating well with *Canada's Food Guide*. Health Canada.

<http://www.hc-sc.gc.ca/fn-an/food-guide-aliment/index-eng.php>

Appendix I

Healthy meal ideas

Follow one of the following sample 24-hour menus to ensure that you're getting all of the food servings recommended by *Canada's Food Guide*.

Sample menu one

Family meal

30 gram BBQ salmon filet (deck of cards)	One serving of meat
One cup whole wheat couscous	Two servings of grain
½ cup fruit salsa	One serving of fruits and vegetables
One cup mixed vegetables	Two servings of fruits and vegetables
One cup milk	One serving of milk

Snacks at work

One large whole wheat wrap	Two servings of grain
One tbsp cream cheese	
30 gram lean deli meat (i.e. ham) Spread the cream cheese on the wrap and lay out the meat. Roll the wrap up and slice for an easy-to-grab snack.	One serving of meat
½ cup sliced cucumber sticks (about four to six)	One serving of fruits and vegetables

Small meal

One cup milk	One serving of milk
1/2 cup applesauce with sprinkled cinnamon	One serving of fruits and vegetables
Three graham crackers	One serving of grain

During the day, if you wake up hungry

25 to 30 pretzels	One serving of grain
-------------------	----------------------

Small snack

One celery sliced into sticks	One serving of fruits and vegetables
One tbsp peanut butter	1/2 serving of meat

Family meal

One cup whole wheat pasta	Two servings of grain
1/2 cup broccoli pureed with oil and garlic (add to pasta as sauce)	One serving of fruits and vegetables
One cup milk	One serving of milk
One medium banana	One serving of fruits and vegetables

Summary of food groups in sample menu one: Eight grain products; eight fruits and vegetables; three milk products; and 2½ meat and alternatives.

Sample menu two*Family meal*

30 gram hamburger patty (deck of cards)	One serving of meat
One whole wheat hamburger bun	Two servings of grain
One slice of processed cheese	1/2 serving of milk
One cup tossed salad with one tablespoon light dressing	One serving of fruits and vegetables
One medium orange	One serving of fruits and vegetables

Snacks at work

One medium apple	One serving of fruits and vegetables
One oz cheese	One serving of milk
Eight whole wheat soda crackers	One serving of grain
Four tablespoons of low-fat hummus	One serving of meat

Small meal

3/4 cup low-fat yogurt	One serving of milk
1/2 cup sliced strawberries	One serving of fruits and vegetables
1/2 cup low-fat granola	One serving of grain

During the day, if you wake up hungry

10 baby carrots with one tablespoon of low-fat dressing	One serving of fruits and vegetables
---	--------------------------------------

Small snack

One medium low-fat bran muffin	Two servings of grain
1/2 cup grapes	One serving of fruits and vegetables

Family meal

One cup vegetable soup	One serving of fruits and vegetables
1/2 whole wheat English muffin	One serving of grain
One teaspoon of margarine or butter	
One slice of processed cheese	½ serving milk

Summary of food groups in sample menu two: Seven grain products; seven fruits and vegetables; three milk products; and two meat and alternatives.

