THE DEVELOPMENT OF HEALTH PROMOTION PROGRAM GUIDES FOR THE WORKPLACE

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The Development of Health Promotion Program Guides for the Workplace

By

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A project submitted to the Faculty of Education in partial fulfillment of the requirements for the degree of Master of Education

Faculty of Education
Memorial University of Newfoundland
1999

St. John's, NF

ACKNOWLEDGEMENTS

I would like to thank my faculty supervisor, Dr. Harry Elliott, for his support and guidance in the planning and development of this project. His prompt and supportive feedback, his patience, as well as his accessibility have been greatly appreciated.

I would also like to thank my family for their support, especially my husband and my parents, without whose encouragement and support I could not have completed this program.

Finally, I would like to dedicate this work to the memory of my uncle, Dr. Austin J. Harte, who through his friendship and great accomplishments, inspired me to strive to attain my goal of higher education.

Abstract

This project provides a practical approach to the development of program guides which serve as the main resources for selected health education sessions within a workplace wellness program. Five guides have been developed which strive to meet a number of needs identified within this relatively new field of education. The goal of this project is to provide material which is comprehensive and user friendly for the educator/facilitator, while ensuring a product which meets the high expectations of organizations in terms of efficiency and effectiveness in affecting employee health behaviors.

The guides provide the facilitator with material and resources needed to deliver quality education sessions. Activities are included to promote active involvement on the part of the learner, in keeping with a transactional approach to learning. These guides may be used within any number of settings within the workplace, and provide a foundation for the development of guides which cover other health related topics.

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Introduction

The concept of health maintenance and the promotion of healthy active lifestyles has become a pervasive theme which permeates almost every facet of the world in which we live. People are constantly striving to live longer and improve the overall quality of life. This theme which often dominates our home life has also carried over into the workplace. Organizations are beginning to recognize the value of a healthy workforce, considering the cost of healthcare related leaves, downtime, and importance of overall worker morale. These organizations are also beginning to play a role in the institution of health promotion within their systems.

Saphire (1995) defined health promotion as "the art of helping people change their lifestyle toward a state of optimal health" (p. 570). One of the most vital aspects of this promotion is education. For the purpose of this project, I chose to focus on this aspect of health promotion. The need for health education in the workplace has given rise to the concept of workplace wellness programs. These programs provide onsite health education on a broad number of topics ranging from back care to menopause. Organizations are most often interested in educational activities presented on a part-time basis, however, some organizations have gone so far as to hire a full time health educator. The implementation of such programs most often falls under the responsibility of nurse educators within the healthcare sector.

As a nurse educator and coordinator of a workplace wellness program, I am responsible for the development and delivery of health education and promotion in the work setting, including the determination of course content and curriculum, as well as the coordination of other nurses who must present various topics. While working in such a position, I feel I have gained some insight into the health needs of my clients and the population as a whole. This insight, along with the knowledge gained through several graduate education courses, has allowed me to develop a project which can be applied in a practical manner within my field. This project directly addresses a number of needs within the field of workplace wellness education.

The Need for Program Guides

Traditionally, health education and health promotion has been considered the responsibility of public health and the goal of a number of health related special interest organizations striving to increase awareness on particular issues. Until recently, employers within the business and government sectors, have not accepted part of this responsibility and thus health education within the workplace has been very limited. As organizations begin to recognize the benefits of health education within the workplace, there has been an increased demand for health education services.

One must recognize that within business and government sectors, accountability is extremely important if the program is to be successful. As with any business venture, organizations in this instance expect to get their "money's worth". They expect an educational product which is:

1) effective- in that it should result in an overall increase in employee health, decreased health related time off work, and positive employee feedback.

2) concise- in that it should provide all vital information in a short time period.

3) interesting- in that it should engage the learner in the educational process to increase overall effectiveness.

Since the concept of workplace wellness programs is relatively new, and considering that most education sessions within the workplace are limited to 1-2 hour "lunch-n-learn" sessions, it is not surprising that the availability of program teaching guides which promote efficiency and effectiveness is limited. Through evaluation of the present teaching resources in the chosen subject areas, I have recognized a distinct need for program guides which are more comprehensive and educator/facilitator friendly. Many of the available guides are poorly organized, poorly referenced, and are lacking in direction, resources and activities which promote active involvement on the part of the learner. In fact, a number of the "packages" viewed were merely a compilation of information on the given topic. In keeping with these considerations, the specific needs which were identified in developing this project are listed as

follows:

1) improved organization: conducive to the provision of education which is meaningful and efficient. The facilitator should feel comfortable in conducting the education session with limited preparation. The guides should provide distinct sections outlining objectives, course content, media applications and learner involvement.

2) greater selection of resources: which are more reliable and current, ensuring the inclusion of recent research.

3) greater utilization of media: including overheads, video and printed material.

4) increased facilitation of learner involvement: emphasizing a shift from a strictly transmissional approach to a more transactional approach, allowing for learner input and evaluation.

Theoretical Framework

Workplace wellness programs are based on the concept that an individual's health related behavior patterns may influence his or her overall level of health. Proponents of such programs suggest that if health behaviors can be positively changed or modified, then one's health should improve and the incidence of illness should be reduced. Heaney & Goetzel (1997) stated that there remains "little doubt

that behaviors play an important role in the etiology of disease" (p. 305). This statement is supported by Salazar (1995) who suggested that many diseases or health problems are behaviorally based. Health behaviors, according to Salazar, are rooted in a person's attitudes and beliefs with regards to their health. These "attitudes and beliefs are often modifiable and hence they provide a convenient target for health promotion" (p. 315).

Saphire (1995) presented workplace health promotion as one effective intervention. Health promotion within the workplace setting, according to Saphire, is "a process that supports positive lifestyle behaviors through corporate policies, individually directed efforts to lower risk of disease and injury and creation of an environment that supports health enhancing activities and behaviors" (p. 570). It is seen "as an educationally oriented process of planned change which focuses on those behaviors or problems that directly or indirectly affect peoples' health" (Ross & Mico, 1980, p. 7). Its intent is "to motivate individuals to personalize health and lifestyle information in such a fashion that they will make positive decisions about personal health" (Anspaugh, Hunter, & Mosley, 1995, p. 203).

According to Salazar (1995), program developers and facilitators are challenged to be sensitive to the complexity of human behavior and difficulties in changing behavior. Programs must be designed to meet the educational needs of employees through consideration of their educational level, health attitudes,

motivation, and social support (Pugh, 1992; Strychar, Shannon, Sowa & Wang, 1992).

The number of organizations and corporations offering workplace wellness programs has increased dramatically in recent years. Wilson, Holman, & Hammock (1996) stated that 81% of all U.S. worksites offer some type of health promotion program. The motivation for this rapid growth, above and beyond the ethical and moral obligations of employers as presented by Stokols, Pelletier & Fielding (1996), is cost effectiveness. Health education and promotion activities at the workplace have resulted in a reduction of insurance cost and employee absenteeism (Fries et al, 1994: Anspaugh et al, 1995: Popp, 1989). In a review of 48 studies of comprehensive health promotion programs in the workplace, Pelletier (1993) found that health education and promotional activities facilitated reduced health care costs, improved overall employee health and morale, and improved employee health knowledge. Heany & Goetzel (1997), in a review of 47 studies of health outcomes of multi-component workplace wellness programs, found the reduction of absenteeism to be the most consistent result following implementation. Goetzel, Kahr, & Aldana (1996), in an evaluation of the effectiveness of the Johnson & Johnson "Live for Life" program found that participants reported significantly fewer absenteeism hours than non-participants and the number of employees considered to be at high risk was

reduced.

Cogwell-Anderson & Anderson (1991) found that workplace wellness education produced significant results in assisting employees to make certain positive health related behavior changes. Follow-up was not seen to produce significantly better results. Erfurt, Foote, & Herrich (1991), in contrast to Anderson & Anderson, found that although education significantly affected employee health behavior, educational follow-up and counseling provided results which were more statistically impressive than those without follow-up and counseling.

A Practical Approach to Program Guide Development

The literature clearly shows that health education in the workplace produces positive results for both employee and employer. The responsibility for the successful implementation of such a program lies largely with the health educator. Health education programs must provide the proper information in the most effective and efficient format. This information must be structured to produce health behavior and attitude changes in employees, which become evident to employers, whether it be through decreased absenteeism, improved morale or positive employee feedback. In developing program guides which are to be utilized within a work setting, it was important to ensure that they provided the facilitator/educator and the learner with

current information, in the most effective and efficient format. To accomplish this, current literature on each topic was researched and reviewed, and relevant information was incorporated into the learning material. Medical terms and jargon were limited in number and clearly explained when used within the program guides. Concepts and health issues were presented in relatively simple, uncomplicated terms to account for variations in learner educational/ learning backgrounds. Those issues which were less pertinent but relevant were presented in sections clearly marked as optional. In this instance the facilitator is expected to use his or her discretion to determine whether these sections should be used, depending on time or the particular learning group.

The guides developed within this project were structured in such a way as to address the previously stated needs with regards to available teaching packages. For example, the need for good organization was central to the development of this project. The program guides were designed to enhance the ease of presentation on the part of the nurse/facilitator who must conduct the learning session with limited preparation. A clear table of contents was provided, followed by a description of guide structure and directions with regards to how it should be used. Through efficient organization these guides are more user friendly and require little time in terms of facilitator preparation. Objectives have been clearly stated so the facilitator is

aware of the goals of the session. Session content is designed to answer a number of distinct questions which apply to these objectives to facilitate ease of presentation. Icons are used to provide the facilitator with adequate instruction with regards to placement of overheads, special notes, and suggested activities. Overheads, activities, references and resources are placed in appendices following session content and are clearly marked for the facilitator's convenience.

As previously stated, many of the available guides or teaching packages as they are referred to, are lacking in current references and direction with regards to resources (where to access pamphlets, videos, and useful information on the given topics). This project has addressed this need by clearly referencing all sources of information used within the given guides and presenting them in accordance with APA guidelines. The guides also provide names and addresses of organizations from which educational materials may be ordered, as well as suggested videos which may be provided on loan. A list of internet sites is provided which allows the facilitator and/or learner to access up-to-date information on the given topic. Finally, a background essay on the given topic is provided for the learner. This serves to clarify or reinforce session content.

The need for utilization of more effective media is quite evident when reviewing available packages on the given topics. Of the available packages reviewed,

most provided too few or too many overheads which didn't coordinate properly with the content provided. Many were visually unappealing, utilizing large amounts of black on white text and very few graphics. This project attempted to improve the visual appeal and the effectiveness of overheads by presenting them with large colorful fonts and clip art. The facilitator is provided with a clear outline which presents the numbered overheads in correct order. While presenting the session content, the facilitator is clearly advised of the need for a new overhead by icons placed next to the overhead number.

The facilitator is also provided with the names of suggested videos which may be used along with the program guide if time allows. These names are also accompanied by names and addresses of organizations which lend these videos free of charge.

Finally, this project addresses the need for active involvement on the part of the learner. With little time to prepare activities which will engage the learner, nurse educators may opt for a transmissional approach, which may not be the most effective in eliciting positive health changes in the learner. The guides which have been developed within this project have included suggested activities, the goal of which is to ensure a shift from a strictly transmissional approach to that of a transactional approach, so the learner feels like an active participant in the learning process.

Activities are clearly marked using icons and are explained to the facilitator. Any required handouts are found in appendix B of the guides.

The importance of learner involvement and the need for a transactional approach to learning is emphasized within the section on purpose and use of the program. Facilitators are strongly encouraged to use the activities and involve the learner as much as possible. The use of learner evaluation forms also allows the learner to provide input and feedback with regards to the learning sessions.

Project Description

The project consists of a series of 5 lunch-n-learn programs guides which are being utilized within a workplace wellness program. These guides have been designed as independent units which serve as the key resources for learning sessions on the given topics. These topics include:

1) **Stress Management**:

Title: Stress Management: The Key to Successful Living!

This guide focuses on:

-the types of stress (positive and negative, acute and chronic): this element incorporates a stress scale in which the learner can measure his or her overall stress level.

-the effects of stress on one's overall level of health: this element involves a discussion of the psychological and physical ramifications of stress.

-strategies to reduce stress at home and in the workplace: this element familiarizes the learner with stress reduction techniques such as progressive relaxation, imagery, time management, and meditation.

2) Heart Health:

Title: Heart Health : A Matter of Necessity!

This guide focuses on:

-a brief discussion of the anatomy and physiology of the heart.

-discussions of such concepts as heart attack, angina, hypertension and contributing factors. This element incorporates discussions and activities regarding risk factors, prevention, signs and symptoms, emergency response and treatment, as well as common myths regarding heart disease.

3) Smoking Cessation:

Title: Smoking Cessation: A Worthwhile Venture!

This guide focuses on:

-a discussion of why people smoke considering the concepts of addiction,

habit and socialization. The learner is encouraged to participate in activities to determine his or her main reasons for smoking and the situations which trigger smoking.

-a discussion of tobacco facts and immediate and long term effects including effects of second hand smoke and smoking in pregnancy.

-a discussion of the stages of change involved in the decision to quit and remain smoke-free.

-strategies to help quit smoking and remain smoke free. The learner is provided with information on how to cope with withdrawal and nicotine craving.

4) Osteoporosis:

Title: Osteoporosis: The Silent Thief!

This guide focuses on:

-a discussion of osteoporosis with regards to the contributing factors, who is affected, how it is manifested.

-involvement of the learner in a checklist to determine risk factors.

-a discussion of measures used to diagnose, prevent, and treat osteoporosis.

-a discussion of measures to reduce and cope with pain related to

osteoporosis.

5) Ergonomics:

Title: Ergonomics: A Sensible Approach to Workplace Safety!

This guide focuses on:

-the definition of ergonomics: a system in which the work or job station is designed to properly fit the worker, instead of the worker having to fit the work station.

-a discussion of how the work environment can contribute to health problems such as CTI's (cumulative trauma injuries) and back injuries. This includes a discussion on signs and symptoms and treatment of these injuries.

-a discussion of the principles of ergonomics and how they can be used to reduce worksite injuries.

-information on proper work site setups with regards to ergonomically designed furniture, proper positioning, and body awareness. This element also incorporates active involvement of the learners in terms of assessing the efficiency of their own work sites and suggesting ergonomic alternatives.

- a discussion of the barriers to ergonomics within the workplace.

Conclusion

With the recent trend toward the healthy active lifestyles, the field of health education has seen a marked increase in the interest in workplace wellness programs. Many employers are recognizing that the promotion and maintenance of a healthy active workforce facilitates an increase in positive employee health attitudes and behaviors, allowing for a healthier, more productive workforce, while also reducing health related spending in the form of sick leave and health insurance.

The rapid growth in this area of health education has provided an interesting and challenging focus for the development of this project. Considering the challenges within the workplace with regards to health education, the guides provide information which ensures facilitation of learning which is relevant and effective. Through the presentation of well researched and organized material, the goals of this project have been achieved. As a result of the development of these guides, I have gained further knowledge of program design and development. This has enhanced my skills with regards to program development in the workplace setting.

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Stress Management

A Key to Successful Living!

A lunch-n-learn program guide.

By: Pamela R. Ward

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Purpose of this module:

This module has been developed in response to a need for well organized, interesting and efficient learning material on the topic of stress management. It is intended to provide nurses facilitating lunch and learn sessions, with accurate, up-to-date information and supporting resources, which can be effectively presented with limited time preparation.

Structure and use of this module:

The nurse/facilitator is provided with learner objectives, along with all information and resources (including handouts and overheads) required to aid the learner in achieving these objectives. Other resources are referenced and may be used to support or enhance the material provided. Also, suggested learner activities are provided, which support the material and encourage participation on the part of the learner. The facilitator is notified by icons when to display overheads, when to carry out activities, and when to take special note of certain information:

 - display overhead

 - take special note

 -suggested activity

The content presented in this module is divided into distinct sections which serve to answer 5 main questions: 1) What is stress? 2) Is stress always a bad thing? 3) How does stress affect us? 4) Do we all experience stress in the same way? and 5) How can we manage stress? A presentation of objectives associated with these questions encourages the learner to contemplate the topic before relevant information is provided.

This module is intended to be utilized in a typical 1-2 hour lunch and learn session. As noted on the title page it is to be used as a guide to an interactive learning session. It is not intended to be presented in lecture format. The learner should be encouraged to share his or her views with regards to the given topic while becoming involved in the suggested activities. The facilitator is encouraged to use the module to initiate and promote discussion and interaction.

Considering this module covers sessions ranging from 1-2 hours in duration, some material is considered optional. This material is clearly marked. It is the responsibility of the facilitator to determine whether optional material should be included, with consideration to time and the particular learning group. In a one hour session for example, much of the optional material may be omitted.

Learner Objectives

Following this learning session on the topic of stress management, the learner will:

1) be able to define stress and differentiate between positive and negative stress.

2) have gained a greater understanding of how stress affects us, both physically and mentally.

3) recognize that everyone experiences stress in a different way.

4) have assessed his or her own level of stress utilizing the Holmes & Rahe Social Readjustment Rating Scale.

5) be familiar with techniques used to reduce or manage one's stress level.

Note: Objectives may be presented to the learner as handouts or overhead. An overhead is provided.

OVERHEAD# 1 

Cover: Stress Management (this overhead is intended to be used while introducing oneself and the topic at hand. It should be placed on the projector before you begin this session).

OVERHEAD # 2 

Learner objectives(the objectives should be presented to the learner before the content is presented).

OVERHEAD #3 

What is Stress?

The concept of stress is a complex and varied one. It seems most people have a different view of what stress actually is. Stress can be viewed in a number of different ways.

According to Rice (1992) stress may be viewed in three ways:

1) as an internal state of mental arousal or tension.

2) as an external or environmental stimulus which causes the person to be tense or aroused.

3) as the body's physical reaction to the demands placed upon it.

OVERHEAD #4 

When considering the concept of stress it is important to accept a definition for stress. For the purposes of this presentation we shall define stress as:

"The physical and mental response of the body to demands made upon it".

OVERHEAD #5 

If we accept this definition for stress, then a *stressor* in this case could be defined as "a challenge or threat to the mind or body which elicits such a response".

Is Stress Always a Bad Thing?

Stress is not always bad. Humans require some degree of stress to function. Too little stress provides us with no challenge or incentive to be alert, productive people. We become bored and unmotivated. Too much stress however, can result in our inability to adapt or cope thus negatively impacting our mental and physical health.

Note: The class should be prompted to give examples of positive and negative stress.

OVERHEAD #6 

☞ This section re: objective #1 is optional. ☜

Selye (1974) described positive and negative stress as Eustress and Distress. According to Selye:

1) ***Eustress*** describes experiences which although stressful, are both positive and pleasurable, resulting in an increase in productiveness. It is seen as something which increases our mental acuity and motivates us to accept challenges. This type

of stress is often short term or acute in nature.

Examples of ***Eustress***:

-a wedding day

-graduation

-birth of a child

2) ***Distress*** describes experiences which are negative in nature and are damaging to one's overall level of health; both physically and mentally. This stress is often chronic and ongoing, leading ultimately to anxiety, panic, and inability to cope or adapt.

Examples of ***Distress***:

-ongoing financial hardship

-personal or family illness

-job dissatisfaction

-marital or relationship difficulties

How Does Stress Affect Us?

As humans, we pride ourselves on being adaptable to change and resilient in the face of crisis. When stress is chronic or long term however, we often find

ourselves unable to handle the demands of such stress. When we lose the ability to cope or adapt we find ourselves in crisis. This manifests itself both physically and mentally.

OVERHEAD # 7 

1) **Physically:**

According to Cooper (1979), "continued exposure to a stressful situation or that which threatens security, self image, pride or general well being of the individual can lead to state of anxiety" (p.8). Anxiety in turn results in a fear response. This initiates a number of responses from our nervous systems. These include:

- ⇑ breathing rate and depth
- ⇑ blood pressure
- ⇑ heart rate
- ⇑ blood flow to major muscles
- ⇓ blood flow to internal organs not needed for "flight". (stomach intestines, kidneys).☞The facilitator should explain the concept of fight or flight.☜

- secretion of adrenaline

Note: These responses use up a great deal of energy. A prolonged stress response often results in exhaustion which ultimately weakens the immune system, leaving the person more susceptible to illness and disease.

OVERHEAD # 8

2) **Mentally and Emotionally**:

Although a certain level of stress periodically can be positive in that it stimulates alertness, clear thinking, and increased productivity, too much stress can result in difficulty thinking and confusion. When experiencing prolonged stress, people become preoccupied with the problem whether it be real or perceived. This preoccupation results in:

- irritability
- insecurity
- fear
- anger
- frustration
- depression

Chronically stressed people often become:

- less social

-more hostile

OVERHEAD #9 

Do All People Experience Stress in the Same Way?

Although stress is a phenomenon which affects every human at one point or another, some people may be more susceptible to the negative effects of stress than others. The way we deal with stress depends on a number of contributing factors such as:

1) **Intensity and duration of stress**:

Stress becomes more difficult to cope with when intense and long lasting.

2) **Social support:**

People respond positively to interaction, conversation, feedback, information and advice.

3) **Prior experience with stressful situations**:

If the person has had a positive outcome when coping with stress in the past, he or she is more likely to cope better when faced with stress again. However, if the person has had a negative outcome when coping with stress in the past, he or she may find it more difficult to cope with future stress.

4) **Knowledge of coping strategies**:

People who possess certain coping skills may utilize them effectively to reduce their levels of stress or prevent a certain degree of stress altogether.

OVERHEAD # 10 

5) **Personality**: In 1974 two doctors, Meyer Friedman and Ray Rosenman described Type A personality or behavior pattern. They suggested that type A personalities are more prone to coronary artery disease. These individuals are seen as highly stressed, driven people. This was one of the first studies to link stress to illness or disease. Type A personalities, according to Friedman and Rosenman, are often impatient, highly competitive and aggressive. They suffer from "hurry sickness".

In contrast, type B personalities tend to be more passive, patient, relaxed individuals. They can pace themselves according to workload and don't feel a general sense of needing to hurry.

Suggested Activity: Distribute the handout provided entitled " Criteria to determine Type A behavior pattern". The learner should be allowed 5-10 minutes to complete this questionnaire. This should be followed by a discussion of Type A behavior. Although the learner is not required to divulge his or her results, they are welcomed to volunteer information. For example: did these behavior patterns seem familiar? Were you aware this was type A behavior?

OVERHEAD # 11 

What is Stress Management?

Stress management is a system that provides tools to help cope with stress. Through utilization of such tools one can learn to regulate one's levels of physiological and emotional stress.

OVERHEAD #12 

What are the goals of stress management?

1) **To identify and assess stressors in one's life.**
-People may often be unaware of many stressors in their lives. If they are aware of the stress, they are often unaware of the degree to which it impacts their lives.

2)**To empower people to cope with stress or remove stressors from their lives**.
-This may be done through relaxation and other stress reducing techniques such as progressive relaxation, imagery and positive thinking, meditation, and time management.

3) **To apply these techniques and skills in ones daily lives to cope with stress.**

Suggested activity: Present the learner with the handout entitled Holmes and Rahe Social Readjustment Rating Scale. The learner should be allowed 10 minutes to complete this scale. The learner should be presented with scoring for the scale and given a couple of minutes to tabulate the results. These results do not have to be shared with the class. This should be followed by a discussion of the stressors which impact us all. The learner should be given opportunity to comment on the things they found to be stressful according to this scale.

OVERHEAD # 13 

Stress Reducing Techniques

There are a vast number of stress reduction techniques in existence. The following is a list of some popular examples:

1) **Progressive relaxation**: This technique involves the progressive contraction and relaxation of major muscle groups, one at a time, leading to a completely relaxed state.

Note: Many think it's paradoxical or contradictory to tense muscles for the purpose of relaxation. However, according to Beech et al (1982), " research demonstrates that when a group of muscles is tensed for a few seconds and then instantly relaxed, a greater decrease of tension may be achieved than by attempting to relax the muscles by letting go; the momentum as it were, allows the tension in the muscles to drop far below the adaptation level" (p. 47).

Suggested activity: Provide the learner with the handout entitled " Progress Muscle Relaxation Exercise". The learner should be given time to read this handout. The lights should then be lowered and the learner instructed to sit in a comfortable position with his or her eyes closed. The facilitator should then take 10-15 minutes to guide the learner through this exercise. If time is limited the learner can simply read the information and practice the technique at a later time.

2) **Meditation**: This technique is defined as a system of mental focusing which is said to produce *alpha waves* (a fourth state of consciousness or wakeful hypometabolic state because energy expenditure goes down). (Benson, 1975). It is derived from ancient Hindu society in which meditation was considered " the highroad to spiritual enlightenment" (Rice, 1992, p. 334). Some researchers argue that meditation merely results in a general state of relaxation as opposed to an altered state of consciousness. Most agree however that it is conducive to stress reduction and improved health.

☞This information re: meditation is optional.☜

The concentration and mental focusing produced by meditation results from a number of factors:

- the repetition of mantra- this can be any word, symbol, or sound.

-rhythmic breathing.

-thought blocking techniques- not allowing obtrusive thoughts to break concentration.

-allowing a general state of relaxation to occur without thinking about relaxation.

Four ingredients are necessary for meditation to be effective:

1) a quiet environment

2) an object on which to focus mentally

3) a passive attitude

4) a comfortable position (avoid positions which are conducive to sleep).

Note: Meditation is often a difficult undertaking. The learner should be made aware that it would be impossible to teach in a short class period. Classes in yoga and meditation however are often available within the community. These are normally taught by people knowledgeable in this area who provide the time needed to learn this technique.

3) **Imagery**: This technique is based on a thought process which utilizes the imagination and all of the senses to evoke stress relieving and relaxation producing images. Like meditation, imagery is said to promote relaxation and maintain a physical and emotional balance in the body. Unlike meditation however, imagery is an easier technique for beginners wanting to learn a tension reducing method.

When we produce a thought or visualize an image in our minds it stimulates the nervous systems to respond. For example:

1) A powerfully fearful mental image results in a fear response in our bodies (as discussed earlier), leading to:

- ⇑heart rate
- ⇑blood pressure
- ⇑breathing rate
- ⇑sweating
- ⇑blood flow to major muscles

2) A powerfully relaxing mental image results in:

- ⇓ heart rate
- ⇓ blood pressure
- ⇓ breathing rate
- ⇑ relaxation of major muscles

To produce images which are relaxing and stress reducing, the individual should focus on: (Zahourek, 1988)

- a favorite place- can be fantasy, vacation, nature, home etc.
- positive experience- real or imagined, may draw upon previous relaxing experiences.
- all senses- for example, one may visualize a deserted beach. In doing so all of the senses should come into play. One should try to smell the salt air and taste the salt water, listen to the sound of the waves crashing against the shore, feel the sand under your feet and see the palm trees swaying in the wind.

Imagery may be used in the workplace to enhance one's ego and increase job performance and motivation. The individual might use positive thinking to picture himself or herself in a positive situation, achieving his or her goals, gaining recognition and appreciation for his or her efforts. Self-talk may be used as a form of assertiveness training using such phrases as "I am smart", "I am competent", or " I can and will achieve my goals".

Suggested activity: distribute the handout entitled "Imagery Exercise". This exercise is a simple example of imagery and provides the learner with a scale to measure their ability to imagine the given scenario. The class may either take 5-10 minutes to review the scenario themselves or the facilitator may instruct the class to close their eyes and listen to the scenario as read by the facilitator. The learner should be prompted to provide feedback on his or her response to the scenario.

4) **Time Management**: This technique has been defined as " the efficient use of our resources, including time, in such a way that we are effective in achieving important personal goals" (Ferner, 1980, p. 12).

In order to manage time effectively it is important to recognize one's weaknesses with regards to time. You must ask yourself :

- Do you avoid work?
- Are you interrupted often?
- Do you consider yourself a perfectionist?
- Do you procrastinate (put off until tomorrow what you can do today)?
- Are you indecisive?
- Are you suffering from work overload?

If you answer yes to many or all of these questions, than according to Rice (1992), you are in need of some effective time management skills.

OVERHEAD # 14 

How Can We Manage Time Effectively? (Rice, 1992)

1) Set priorities:

- Set goals and reevaluate them on a regular basis (a to-do list).- goals should be realistic and achievable.

- Set target dates.

2) Follow the Pareto Principle: "the vital few and the trivial many".

- Devote the majority of your time to the most important and valuable tasks.(One can be very efficient, but if your doing the wrong thing, task time is wasted.)

3) Don't procrastinate:

- Break tasks down into smaller parts so it appears more attainable. In this way, getting started is easier.

4) Concentrate on the essentials:

- Conquer the essential tasks first. Worry about non-essentials later.

5) Learn to delegate:

- Delegating tasks to others can free up time for other tasks.

6) Mark time and progress

- Create check lists and project calenders.

- Cross tasks off when done so you can view what has been accomplished.

7) Take a break:

- Don't overload on work. This can be counterproductive, resulting in stress and work burnout.

Note: Time management should be viewed as a tool to be used when needed. It is not to be considered a daily chore or this in itself may produce a stress response.

Remember!

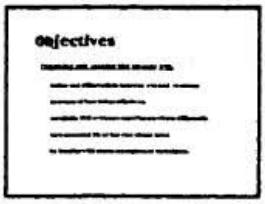
It is important to recognize that people are not slaves to stress. We can do something to reduce or moderate the level of stress in our lives. The key to managing one's own level of stress is to become aware of the stressors in one's life and accept responsibility for controlling or eliminating these stressors.

OVERHEADS

Overhead Outline

Overhead #1

Overhead# 2



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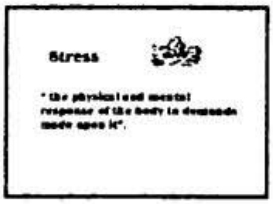

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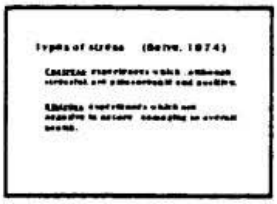

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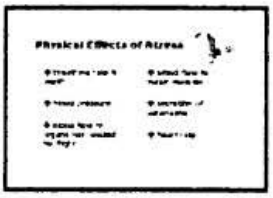

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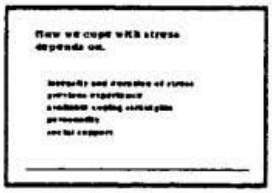

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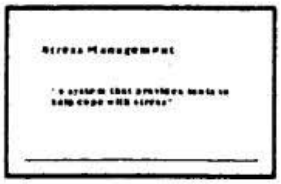

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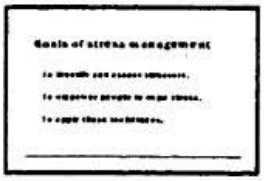

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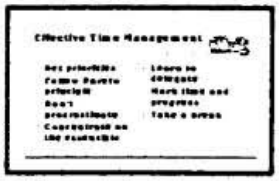
Overhead# 14



STRESS MANAGEMENT

- **A key to productive living!**

Objectives

- **Following this session the learner will:**
  - **define and differentiate between +ve and -ve stress.**
  - **be aware of how stress affects us.**
  - **recognize that everyone experiences stress differently.**
  - **have assessed his or her own stress level.**
  - **be familiar with stress management techniques.**

3 WAYS TO VIEW STRESS

- As an internal stimulus.
- As an external stimulus.
- As the body's response to external demands.

Stress

“ the physical and mental response of the body to demands made upon it”.

Stressor

"a challenge or threat to the mind or body which elicits a stress response".

Types of Stress (Selye, 1974)

- **Eustress**- experiences which, although stressful, are pleasureable and positive.

- **Distress**- experiences which are negative in nature - damaging to overall health.

Physical Effects of Stress

- ↑ breathing rate & depth
- ↑ blood pressure
- ↑ heart rate
- ↑ blood flow to major muscles
- ↓ blood flow to organs not needed for flight
- ↑ secretion of adrenaline

Mental and Emotional Effects of Stress

- ↑ irritability
- ↑ insecurity
- ↑ fear
- ↑ anger
- ↑ frustration
- ↑ depression
- ↑ hostility
- ↓ socialization

How We Cope With Stress Depends On:

- intensity and duration of stress
- social support
- previous experience
- available coping strategies
- personality

Type A Personality

- more prone to heart disease
- highly stressed
- competitive
- impatient
- aggressive

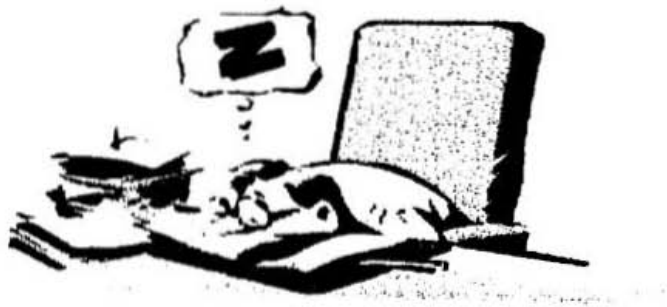
Stress Management

“ a system that provides tools to help cope with stress”.

Goals of Stress Management

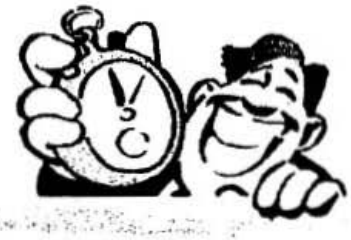
- To identify and assess stressors.
- To empower people to cope stress.
- To apply these techniques.

Stress Reduction Techniques



- Progressive Relaxation
- Imagery
- Meditation
- Time Management

Effective Time Management



- Set priorities
- Follow Pareto principle
- Don't procrastinate
- Concentrate on the essentials
- Learn to delegate
- Mark time and progress
- Take a break

SUGGESTED ACTIVITIES

STRESS MANAGEMENT

The Social Readjustment Rating Scale

(Holmes & Rahe, 1967)

Life Event	Stress Value		Number of times you experienced the event in a year		Your total life change scores
Death of a spouse	100	x		=	
Divorce	73	x		=	
Marital separation	65	x		=	
Jail term	63	x		=	
Death of a close family member	63	x		=	
Personal injury or illness	53	x		=	
Marriage	50	x		=	
Fired at work	47	x		=	
Marital reconciliation	45	x		=	
Retirement from work	45	x		=	
Change in health of family member	44	x		=	
Pregnancy	40	x		=	
Sex difficulties	39	x		=	
Gain of new family member	39	x		=	

Business readjustment	39	x	=
Change in financial state	38	x	=
Death of a close friend	37	x	=
Change to different line of work	36	x	=
Change in # of arguments with spouse	35	x	=
Mortgage over one year's net salary	31	x	=
Foreclosure of loan or mortgage	30	x	=
Change in responsibilities at work	29	x	=
Son or daughter leaving home	29	x	=
Trouble with in-laws	29	x	=
Outstanding personal achievement	28	x	=
Spouse begins or stops work	26	x	=
Begin or end school	26	x	=
Change in living conditions	25	x	=
Revision of personal habits	24	x	=
Trouble with boss	23	x	=
Change in working hours or conditions	20	x	=
Change in residence	20	x	=
Change in school	20	x	=
Change in recreation	19	x	=
Change in church activities	18	x	=
Change in social activities	18	x	=
Mortgage or loan less than 1 year's salary	17	x	=
Change in sleeping habits	16	x	=
Change in number of family get togethers	15	x	=
Change in eating habits	15	x	=
Vacation	13	x	=
Christmas	12	x	=
Minor violations of the law	11	x	=

Evaluation of Life Changes

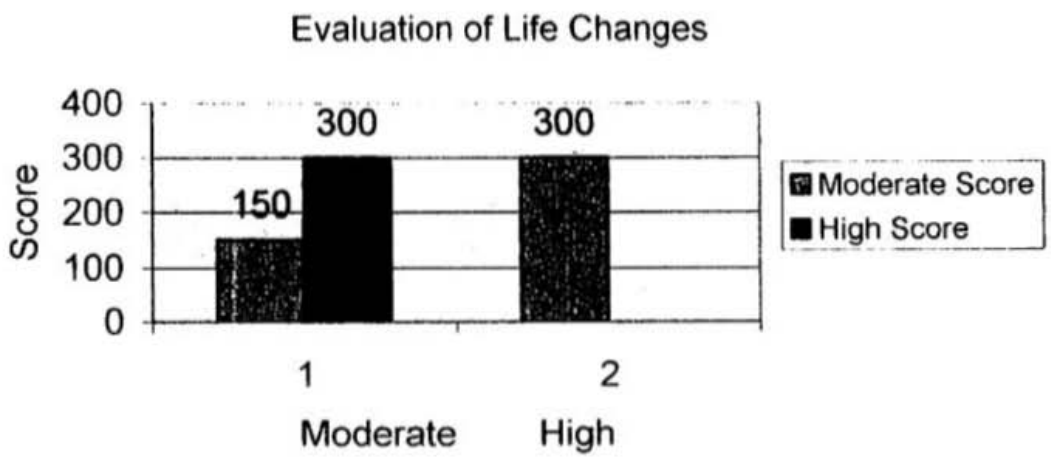
High scores have been correlated
with vulnerability
to illness and accidents.

If your score is above 300 it does
not always mean you will
get sick or have an accident.

People respond differently to the
same stressors for a variety
of reasons.

People with a high score who are already in distress are at greater risk

Moderate Score	150	300
High Score	300	



Criteria Used to Identify Type A Behavior Pattern

Rice (1992) [adapted from Friedman & Rosenman (1974).]

1. Do you overemphasize some word in speech and hurry the last words in your sentence? Yes__ No__
2. Do you always move, eat and walk rapidly? Yes__ No__
3. Are you generally impatient and get irritated when things do not move fast enough for you? Yes__ No__
4. Do you frequently try to do more than one thing at a time? Yes__ No__
5. Do you generally try to move the topic of conversation to your own interests? Yes__ No__
6. Do you feel some sense of guilt when you are relaxing? Yes__ No__
7. Do you frequently fail to take note of new things in your environment? Yes__ No__
8. Are you more concerned with getting than becoming? Yes__ No__
9. Do you constantly try to schedule more activities in less time? Yes__ No__
10. Do you find yourself competing with other people who are also time-driven? Yes__ No__
11. Do you engage in expressive gestures, clenching a fist or pounding the table to emphasize a point, while engaged in conversation? Yes__ No__
12. Do you believe that your fast pace is essential to your success? Yes__ No__
13. Do you score success in life in terms of numbers: numbers of sales, cars, and so on? Yes__ No__

Scoring: If you answered most of the "yes" then you would be described as a typeA personality. If you answered yes to over half of them you might still be regarded as type A, but not an extreme typeA.

Imagery Exercise

Sit in a relaxed position and close your eyes. Imagine you are in a kitchen, perhaps your kitchen. Hear any sounds you might hear in this place, see the colors, smell the smells... and you slowly walk over to the refrigerator. Feel the door handle and its resistance as you pull on it... feel the cold air that wafts out as you open the door, the light comes on in the fridge.

Go to that place in the fridge where you might keep fruit... reach in and take out a big yellow lemon. Feel the weight of the lemon in your hand, its texture... the coolness of its skin. Now close the door and walk over to where you might cut up fruit. Put the lemon on a cutting surface... pick up a knife... feel its weight and balance in your hand. Now cut the lemon in half – see the beads of juice on the knife... smell the faint smell of lemon. Now cut one half into quarters... pick up a quarter of the lemon and bring it up to your nose – smell the sharp scent – now bring it to your mouth and take a big bite of that lemon...okay, come back into the room.

Reflecting on the just completed imagery exercise circle the number that best relates to your experience:

	Not At All									**Very Clearly**
1. Could you smell the lemon?	1	2	3	4	5	6	7	8	9	10
2. Could you feel the lemon, door handle, etc?	1	2	3	4	5	6	7	8	9	10
3. Could you taste the lemon?	1	2	3	4	5	6	7	8	9	10
4. Could you hear sounds?	1	2	3	4	5	6	7	8	9	10
5. Did you have clear pictures?	1	2	3	4	5	6	7	8	9	10
6. Could you see colours?	1	2	3	4	5	6	7	8	9	10
7. Could you sense your body moving?	1	2	3	4	5	6	7	8	9	10
8. Other?	1	2	3	4	5	6	7	8	9	10

adapted from Zahourek, (1988)

Progressive Muscle Relaxation Exercise (Rice, 1992)

This exercise follows a sequence of alternating tension and relaxation in 16 major muscle groups. The sequence is not necessarily important. It is up to the individual to follow their preferred sequence in order to promote maximal relaxation.

Find a comfortable position. You should tense or tighten up the given muscle, hold it for 10-15 seconds then relax the muscle for 15-20 seconds. It is suggested that greater relaxation occurs if a muscle is tensed prior to relaxation.

1) preferred arm
2) alternate arm
3) preferred hand
4) alternate hand
5) shoulder muscles
    a) preferred hand side
    b) alternate side
6) neck muscles- head to chest and side to side
7) forehead, eyes, scalp
8) jaws and mouth (tongue- may use extra step)
9) breathing- chest and trunk- deep breath and exhale
10) stomach
11) lower back
12) buttocks
13) preferred thigh
14) alternate thigh
15) preferred foot and calf
16) alternate foot and calf

Goals: - 2sessions per day
- 3 repetitions for each muscle group
-10-15 seconds for tension
-15-20 seconds for relaxation

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Notable Stress Related Web Sites

http://www.smart.net/~cclarke - provides a number of articles and interesting stress related links

http://www.w3.org/vl/stress - provides a stress bulletin board with links to numerous web sites on stress.

http://www.demon.co.uk/mindtool/smpage.html - provides articles on stress that help understand the concept of stress and the strategies to deal effectively with it.

http://www.altunahosp.org/stress.htm - provides numerous interesting and current articles on stress and stress reduction.

Pamphlets and other resources may be ordered through:

-Canadian Mental Health Association

-Heart and Stroke Foundation

-Local Employee Assistance programs (depending on employer).

Recommended videos:

-Getting a Handle on Stress (26 min).
This video discusses how to recognize stress and ways to reduce stress in your life.
(Available on loan from the Canadian Mental Health Association).

Stress Management:
The Key to Physical and Emotional Success

What is Stress?

Everyone is familiar with the concept of stress and are sure to have experienced it at one time or another in their lives. However, we often don't stop to think about what stress means to us in our everyday lives ; both at work and at home. To begin to contemplate the concept of stress it is first important to define what stress is. Unfortunately, that is often not an easy task. If one were to survey 50 people with regards to their definition of stress the result may be 50 different definitions. Stress is perceived in different ways by different people.
According to Rice (1992), stress may be viewed in three ways:

1) as an internal state of mental arousal
2) as an external or environmental stimulus which causes the person to be tense or aroused.
3) as the body's *physical* reaction to demands placed upon it.

When considering the impact of stress on the individual it is often necessary to view stress as the physical and mental response of the body to demands placed upon it. These demands may be seen as *stressors*. Just as wind exerts a force which can effect the structure of a bridge, stressors in our lives can effect our physical and emotional foundations.

How Does Stress Affect Us?

Stress is not always a negative thing however. Humans require some stress to maintain a certain level of alertness Without some degree of stress, we would not be motivated to accept challenges in life. Too little stress provides us with no incentive to be productive. Too much stress however, can result in our inability to cope or adapt, thus negatively affecting us both mentally and physically. According to Cooper & DiBiaggio (1979), "continued exposure to a stressful situation or that which threatens security, self image. Pride, or general well-being of the individual can lead to a state of anxiety (p. 8). This anxiety in turn can result in fear which initiates a number of physical changes. These include:

- ↑ breathing rate and depth
- ↑ blood pressure
- ↑ heart rate
- ↑ blood flow to major muscles
- ↑ secretion of adrenaline
- ↓ blood flow to organs not needed for flight (i.e. stomach, intestines...)

These responses use up a great deal of energy. Thus, if one were to experience a prolonged stress reaction, exhaustion may occur. Exhaustion leaves a person more susceptible to disease and illness.

Prolonged exposure to stress can also impact an individual's mental and emotional well-being. Although a certain level of stress can be positive in that it stimulates one to think clearly and function more productively, too much stress can result in difficulty thinking and confusion. People often become more focused on problems or perceived problems. This preoccupation may result in irritability and feelings of insecurity, fear, anger, frustration and depression. These people often become less social, more hostile and less caring toward others.

How Can We Manage Stress?

It is important to recognize that people are not slaves to stress. We can do something to reduce or moderate the level of stress in our lives. The key to managing one's own level of stress is to become aware of the stressors in one's life and accept responsibility for controlling or eliminating these stressors. Psychologists and stress management experts suggest a number of techniques which can be utilized to combat the negative ramifications of stress. These techniques are numerous and diverse. Some of the more common techniques include: imagery and self-talk, meditation, progressive relaxation and time management. These techniques range in terms of level of difficulty and may be learned through home study or stress management sessions.

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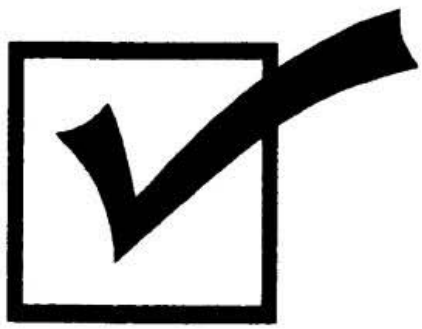
Cooper, T., M., & DiBiaggio, S., A.(1979). Applied Management: A strategy to control stress. Toronto: C.V. Mosby.

Rice, P., L.(1992). Stress and health. 2nd ed. Ca: Brooks/Cole.

Learner Evaluation Form



Learner Evaluation Form

On a scale of 1 (not at all) to 5 (very much), please rate the stress management session you have just participated in:

Did you find the session informative?	1	2	3	4	5
Was it easy to understand?	1	2	3	4	5
Was it interesting?	1	2	3	4	5
Was the presenter open to questions and discussion?	1	2	3	4	5
Did you find the session useful?	1	2	3	4	5

What did you like most about the session?

_____

_____

What did you like least about the session?

_____

_____

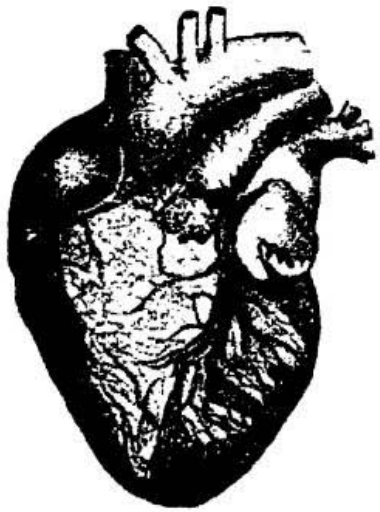
Any suggestions for improvement?

_____

_____

Thank you for your participation!

Heart Health



A Matter of Necessity!

A lunch-n-learn program guide.

By: Pamela R. Ward

Table of Contents

Purpose of this module:

This module has been developed in response to a need for well organized, interesting and efficient learning material on the topic of heart health. It is intended to provide nurses facilitating lunch and learn sessions, with accurate, up-to-date information and supporting resources, which can be effectively presented with limited time preparation.

Structure and use of this module:

The nurse/facilitator is provided with learner objectives, along with all information and resources (including handouts and overheads) required to aid the learner in achieving these objectives. Other resources are referenced and may be used to support or enhance the material provided. Also, suggested learner activities are provided which support the material and encourage participation on the part of the learner. The facilitator is notified by icons when to display overheads, when to carry out activities, and when to take special note of certain information:

 - display overhead

 - take special note

 -suggested activity

The content presented in this module is divided into distinct sections which serve to answer 6 main questions: 1) What is the heart and how does it work? 2)What is a heart attack and the factors which contribute to it? 3)What are the signs and symptoms of a heart attack? 4)What should one do in case of emergency? 5) What is Angina? and 6) What are some myths regarding heart disease? A presentation of objectives associated with these questions encourages the learner to contemplate the topic before relevant information is provided.

This module is intended to be utilized in a typical 1-2 hour lunch and learn session. As noted on the title page it is to be used as a guide to an interactive learning session. It is not intended to be presented in lecture format. The learner should be encouraged to share his or her views with regards to the given topic while becoming involved in the suggested activities. The facilitator is encouraged to use the module to initiate and promote discussion and interaction.

Considering this module covers sessions ranging from 1-2 hours in duration, some material is considered optional. This material is clearly marked. It is the responsibility of the facilitator to determine whether optional material should be included, with consideration to time and the particular learning group. In a one hour session for example, much of the optional material may be omitted.

Learner Objectives

Following this learning session on the topic of heart health, the learner will:

1) be knowledgeable with regards to what the heart is and how it works.

2) have gained a greater understanding of heart attacks and the factors which contribute to them.

3) recognize the signs and symptoms of a heart attack.

4) be knowledgeable regarding emergency response.

5) be familiar with the disorder called angina and how it differs from a heart attack.

6) have a greater understanding of some myths regarding heart health.

Note: Objectives may be presented to the learner as handouts or overhead. An overhead is provided.

OVERHEAD# 1 

Cover: Heart Health (this overhead is intended to be used while introducing oneself and the topic at hand. It should be placed on the projector before you begin this session).

OVERHEAD # 2 

Learner objectives (the objectives should be presented to the learner before the content is presented).

OVERHEAD#3 

What is the heart and how does it work?

☞It is recommended that a 3-d model of the heart be used for this section to support the overhead. However, if this is not possible the appropriate overhead is sufficient.☜

The heart is a muscle which measures about the size of your fist and functions to pump blood throughout the body. Through this circulation of blood, the body receives oxygen which is vital to tissues and organs for the delivery of

nutrients and the excretion of waste material.

The heart is made up of 4 chambers: the right and left ***ventricles*** (the main pumping chambers) and the right and left ***atria*** (the less muscular chambers) which deliver blood to the ventricles. The pumping action of these chambers is stimulated by ***nodes***. Nodes are "specialized cells that initiate the heartbeat and electrically coordinate contractions of the heart chamber" (Lilly,1998, p. 6). They determine the pace of the heart or how fast it beats.

Note: The facilitator should elaborate with regards to the functioning of nodes. The physiology of the heart should be familiar to any nurse facilitating such a session.

A normal heart beats 50-100 times per minute. Variations in the electrical signals of the nodes can cause this rate to be too slow (< 50 beats/minute) or too fast (> 100 beats per minute resting). People who suffer from node problems may be placed on certain medications to regulate the heartbeat, while others may have a pacemaker inserted. This device electrically stimulates the heart to beat, as the node usually would.

Suggested activity: The facilitator should take five to ten minutes to teach the learner how to accurately take his or her own pulse. The learner should take a resting pulse, then jog in place for a few minutes. The pulse should be taken again. The facilitator can explain why the heart rate increases with exercise. (↑ oxygen consumption).

The heart is surrounded by blood vessels which supply the heart with oxygen (***arteries***) and which send oxygen depleted blood away from the heart to the lungs where the carbon dioxide is exchanged for oxygen (***veins***). Prolonged high cholesterol results in a build-up of plaque in these arteries which causes them to become narrowed allowing less blood to flow to the heart.

Note: (***Optional***): When we speak of people with "blockages" in their hearts requiring bypass surgery, it is the arteries around the heart we are speaking of. The facilitator may describe coronary artery bypass graft (CABG) surgery to the learner.

OVERHEAD # 4 

What is a heart attack?

A heart attack occurs when oxygen to the heart is decreased to such a point that permanent damage is done to at least part of the heart. This lack of oxygen is the direct result of a blockage, often in the form of a blood clot Only when permanent damage is done, is it called a heart attack..

OVERHEAD# 5 

Risk Factors

There are a number of factors that contribute to a heart attack. These include:

☞ (The facilitator should first prompt the learner to list some risk factors and then elaborate on these).☜

- age >60
- smoking

- family history
- diet high in sodium and fat
- high blood pressure
- obesity
- stress
- some diseases- i.e. diabetes, emphysema
- lack of exercise

★The greater the number of risk factors, the greater the chance of suffering from heart disease.★

Suggested activity: The learner should be provided with the handout entitled "Heart Health Self Assessment" and given 5-10 minutes to complete it. This should be followed by a discussion of results (voluntary).

High Blood Pressure

☞This section re: blood pressure is optional.☜

High blood pressure is one factor which contributes greatly to heart disease and is worthy of further discussion. Blood pressure may be defined as the pressure the blood puts on the blood vessels when it is circulating. A normal

blood pressure falls between 90/60 and 140/90. The top number is an indication of how hard the heart is pumping, while the bottom number indicates the amount of pressure on the blood vessels when the heart is relaxed (between beats).

When blood pressure rises above 140/90 on a regular basis, this places too much pressure on the heart and the blood vessels often resulting in heart disease or stoke. Treatment involves lifestyle changes, including low fat-low sodium diet, exercise, stress management, and smoking cessation. If these efforts alone do not decrease blood pressure to a reasonable level your doctor may prescribed blood pressure lowering medications.

OVERHEAD# 6 

What are the signs and symptoms of a heart attack?

1) Pain- this is the direct result of lack of oxygen to the heart. The pain may manifest itself in many ways and does not have to be directly in the chest area. It can be a severe vice-like pain, it may radiate down the arms or

shoulders to the neck and jaw. Some have described this pain as a feeling of weight or tightness upon the chest. Others may suffer from symptoms similar to indigestion. This pain may be constant or intermittent.

2) Perspiration- the person is usually clammy or sweaty.

3) Anxiety- the person often is panicked or has a feeling of fear or dread.

4) Shortness of breath- when the heart is not pumping correctly, the person often has difficulty breathing.

5) Nausea and vomiting- many people get very stomach sick and begin to throw up.

Note: The person suffering from a heart attack will often deny that this is what is happening. Out of fear, he or she may attribute the symptoms to indigestion.

OVERHEAD# 7 

What should you do?- emergency response.

Call 911 immediately- never attempt to drive the person to the hospital on your own. Ambulances have trained personnel who can treat the person on the way to the hospital. Numerous people have been saved on the way to the hospital through CPR (cardiopulmonary resuscitation) and administration of oxygen. This would be impossible for you to do in a car while driving.

When calling- give your name , address and symptoms of the patient.

If the person has stopped breathing and has no pulse- administer CPR if trained to do so. If not, do not hang up on the 911 operator, as they may guide you through the procedure until emergency personnel reach you.

Note: 60-70% of persons who have a heart attack die before they reach hospital and it only takes 4 minutes for brain cells to die when deprived of oxygen. For these reasons, everyone should be trained in CPR. The facilitator should explain the concept of CPR to the learner.

OVERHEAD# 8 

What is Angina?

Angina is the pain or discomfort resulting from a disorder called *ischemic heart disease.* This pain is a direct result of decreased blood flow to the heart, caused by a narrowing of the coronary arteries (most commonly from fatty deposits on the arteries called plaque). It is characterized by short attacks of stabbing, sharp or burning pain or discomfort in and around the chest, often upon exertion. Unlike a heart attack, angina attacks do not permanently damage the heart but are a sign that the person may be in danger of a heart attack.

☞This section re: stable and unstable angina is optional.☜

OVERHEAD# 9 

There are two types of angina:

1) Stable angina: this results when the arteries have narrowed to such a degree that there is enough blood flow at rest so that the heart receives enough oxygen. However, when the person exercises or exerts him or

herself, the blood flow is not enough to supply the heart with the increased oxygen it demands. This is when pain occurs.

2) Unstable angina: this condition is more severe than stable angina in that the blood flow is decreased to such a degree that the heart is not receiving adequate oxygen even at rest. The person may have pain at any time, which may be made worse by exercise. This condition is seen as a precursor to a heart attack.

Angina may be treated with nitroglycerin, a drug which opens or widens the arteries temporarily, allowing blood to flow more freely, thus reducing pain. If experiencing pain, the person prescribed nitroglycerin should take one tablet every 5 minutes for 15 minutes- a maximum of 3 tablets. If pain continues, the person should seek medical attention because this pain may be the result of a heart attack.

Note: Nitroglycerin may be taken in pill or spray form. Pills are to be placed under the tongue where they dissolve almost instantly. The spray may be sprayed directly under the tongue. This medication should be kept in a cool dry area, and should not be stored outside its dark container or used after its expiry date, as it may lose some of its effectiveness.

What are some *Myths* regarding heart disease?

☞this section which covers objective #6 is optional, but recommended if possible. It should be presented to the learner as true or false questions before the accurate information is provided. This will promote learner participation☜.

OVERHEAD# 10 

1) **Heart attacks only happen to men**: the number one killer of women over the age of 60 is heart disease. Women are somewhat protected from heart disease before menopause. This protection is mainly the result of the hormone estrogen. However, as estrogen levels decrease, the risk of heart attack increases. Women are seen to exhibit most of the same contributing factors such as smoking, high fat diets, obesity etc.

2) **If I take an aspirin a day I will not have a heart attack**: ASA or aspirin does decrease the incidence of heart attacks by thinning the blood to reduce the chance of blood clots, however this does not eliminate other risk factors. As long as one is not active, has a high fat intake, is smoking etc. there is still a risk of heart disease.

Note: an aspirin a day (as recommended by your Dr.), along with a healthy active lifestyle may reduce your risk of heart attack by up to 50%.

3) **I eat a healthy diet so my arteries are fine**: Even those who eat a healthy, relatively low fat diet, may be at risk for coronary artery disease since heredity accounts for 80% of elevated cholesterol levels. Diet alone actually accounts for only 20% of elevated cholesterol. For those people with genetically high cholesterol, a low fat diet may not be enough. These people are often prescribed cholesterol reducing drugs.

Note: Everyone should undergo routine screening to determine whether their cholesterol levels are elevated, so they may take action to reduce it before problems arise.

4) **If you drink alcohol daily you will not have a heart attack**: research shows that one to two alcoholic beverages per day may be beneficial to the heart. However, beyond this moderate level, alcohol can serve to increase blood pressure resulting in greater stress on the heart.

OVERHEAD # 11 

Heart Healthy Reminders

Heart disease is a major cause of death in both males and females in our country. It is important for people to recognize that many of the factors which contribute to these heart problems can be controlled through active healthy lifestyle changes. People must take responsibility for their own health and choose health behaviors which promote good heart health. For example:

1) Don't Smoke.

2) Know your family history.

3) Maintain a well balanced low fat diet.

4) Get regular exercise.

5) Maintain a healthy weight (follow the BMI-body mass index)
☞facilitator should demonstrate this to the learner.☜

6) Monitor and regulate elevated blood pressure.

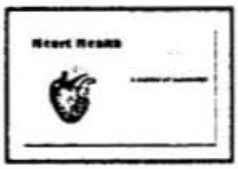
7) Decrease stress or seek stress management skills.

8) Post-menopausal women should discuss Estrogen replacement therapy with their doctors.

OVERHEADS

Outline of Overheads

Overhead # 1



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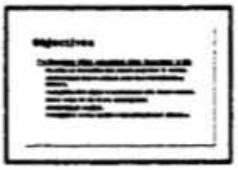

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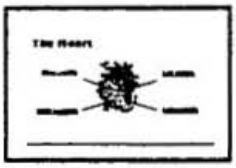

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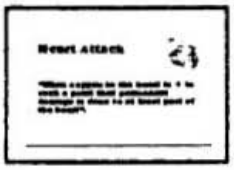

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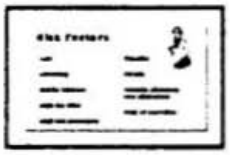

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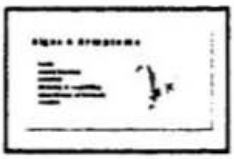

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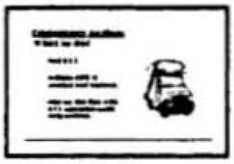

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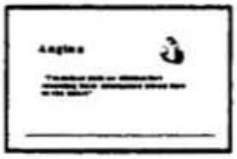
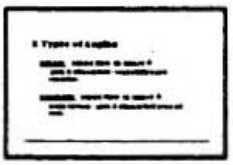


Overhead# 9



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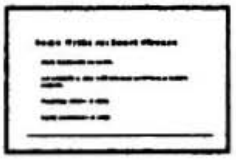
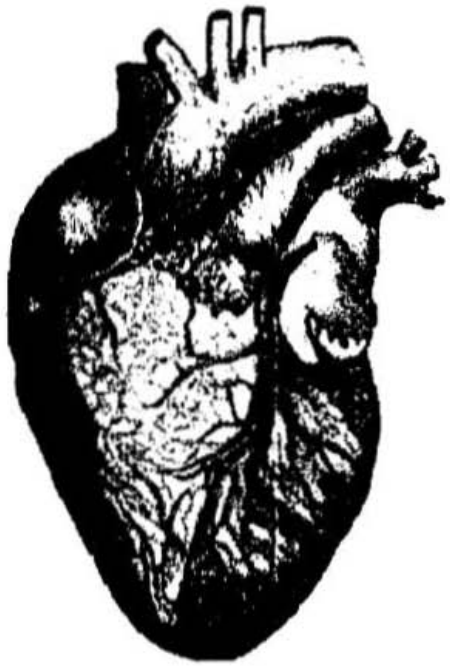


Overhead # 11

Heart Health

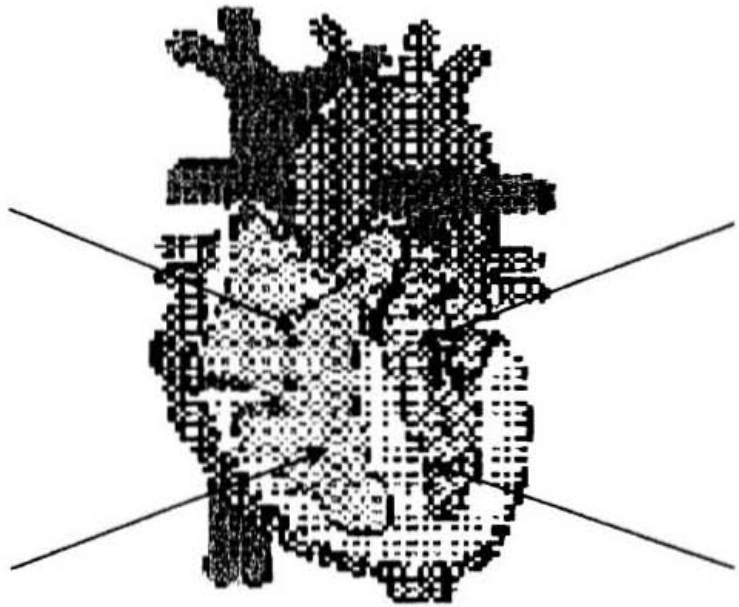


- **A matter of necessity!**

Objectives

- **Following this session the learner will:**
  - be able to describe the heart and how it works.
  - understand heart attack and the contributing factors.
  - recognize the signs & symptoms of a heart attack.
  - know what to do in an emergency.
  - understand Angina.
  - recognize some myths regarding heart disease.

The Heart



Right atrium

Left Atrium

Right ventricle

Left ventricle

Heart Attack

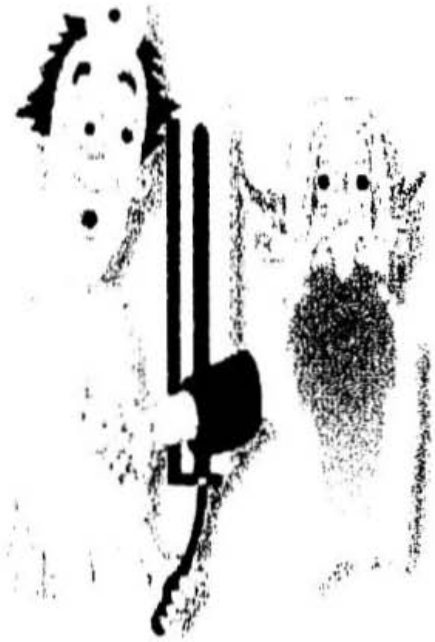
"When oxygen to the heart is ↓ to such a point that permanent damage is done to at least part of the heart".

Risk Factors

- Age
- smoking
- family history
- ↑ fat & sodium diet
- high blood pressure
- Obesity
- stress
- certain diseases (ex: diabetes)
- lack of exercise

Signs & Symptoms

- Pain
- perspiration
- anxiety
- shortness of breath
- nausea & vomiting



Emergency Action:

What to do!

- **Call 911.**
- **Initiate CPR if needed and trained.**
- **stay on the line with 911 operator until help arrives.**

Angina

"Transient pain or discomfort resulting from decreased blood flow to the heart".

2 Types of Angina

- **Stable** - blood flow to heart ↓
  - pain & discomfort - especially upon exercise.

- **Unstable** - blood flow to heart ↓
  - more severe - pain & discomfort even at rest.

Some Myths re: heart disease

- Only happens to men.
- An aspirin a day will always prevent a heart attack.
- Healthy diet= 0 risk
- Daily alcohol= 0 risk

Heart Healthy Reminders

- Don't smoke
- Know family history
- Well balanced/low fat diet
- Regular exercise
- Healthy weight
- Monitor & regulate ↑ BP
- ↓ stress
- ERT for postmenopausal women.

SUGGESTED ACTIVITIES

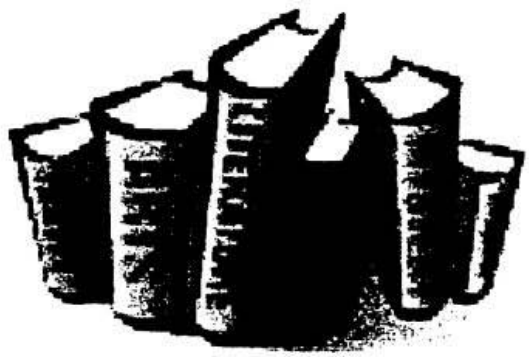
Heart Health Self Assessment

Please answer the following questions:

	Yes	No
I am over 60	___	___
I have a family history of heart disease	___	___
I smoke	___	___
I eat a high fat diet	___	___
I am obese	___	___
I am physically inactive	___	___
I have high blood pressure	___	___
I have a lot of stress	___	___
I am diabetic	___	___
I have emphysema	___	___

NOTE: Your risk of heart disease increases with the number of "yes" responses. If you are concerned regarding the number of times you answered yes to these questions, you should consult your physician.

REFERENCES AND RESOURCES



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Feldman, E, B. (1983). Nutrition and heart disease. New York: Churchill Livingstone.

Heyden, S. (1982). Preventive cardiology: Results from intervention studies. Durham: Boehringer.

Lilly, L. (1998). Pathophysiology of heart disease. 2nd ed. Baltimore: Williams & Wilkins.

Martin, A., & Camm, A. (1982). Heart disease in the elderly. New York: Wiley & Sons.

Pamphlets and other resources may be ordered through:

Heart and Stroke Foundation

Local Community Health Resource Catalogue

Recommended Videos:

Understanding Coronary Heart Disease (16:20 min).

Heart of the Matter: Reducing the Risk of Heart Attack (23:21)

(Available on loan from the Heart and Stroke Foundation)

Heart Health: A Matter of Necessity!

What is the heart and how does it function?

The heart is a muscle about the size of your fist which serves to pump blood throughout your body, so the organs and tissues may receive vital oxygen and nutrients, and remove waste materials. It is surrounded by blood vessels which supply it with oxygen (arteries) and carry oxygen-depleted blood to the lungs where it picks up more oxygen (veins). It is the arteries around the heart which often become blocked and cause people to have heart attacks.

What is a heart attack and the factors which contribute to it?

A heart attack occurs when oxygen to the heart is decreased to such a point that the heart muscle cannot survive and permanent is done. This lack of oxygen is the direct result of a blockage (often in the form of a blood clot). There are a number of factors contribute to heart disease and heart attacks. These include: family history of heart disease, age, smoking, lack of exercise, high fat-high sodium diet, obesity, high blood pressure, stress, and certain diseases such as diabetes and emphysema.

What are the signs and symptoms of a heart attack and what should you do?

There are certain signs and symptoms which indicate that one may be having a heart attack. These include pain (which may often be mistaken for indigestion, or may feel vice-like and radiate from the chest to the neck and arm), sweating, shortness of breath, nausea and vomiting, anxiety, and denial.

If you fear someone may be having a heart attack, the first and most important thing to do is *call 911*. One should never attempt to drive a suspected heart attack victim to the hospital on his or her own. Trained personnel aboard an ambulance can provide needed care on the way to the hospital. It would be impossible for you to do CPR for example, while driving. It is also important to remember when calling 911 to give your name, location, and the symptoms of the patient. If the person has no pulse, and you know CPR, than you should administer CPR. If you do not know CPR, then you do not hang up on the 911 operator, as they may guide you through the procedure until emergency personnel arrives.

What is Angina?

Many people with heart disease suffer from angina. This is pain or discomfort which results from decreased blood low to the heart caused by a narrowing of the coronary arteries (most commonly from fatty deposits in the arteries called plaque). It is characterized by short attacks of stabbing, sharp, or burning pain or discomfort in or around the chest, often upon exertion. People suffering from angina are at a much greater risk for having a heart attack than most people.

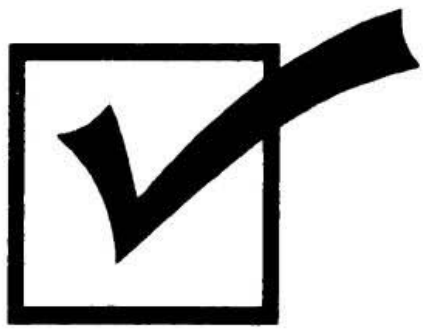
Heart disease is a major cause of death in both males and females in our country. It is important for people to recognize that many of the factors which contribute to this heart problems can be controlled through active healthy lifestyle changes. People must take responsibility for their own health and choose health behaviors which promote good heart health.

References

Heyden, S. (1982). Preventive cardiology: Results from intervention studies. Durham: Boehringer.

Lilly, L. (1998). Pathophysiology of heart disease. 2nd ed. Baltimore: Williams & Wilkins.

Learner Evaluation Form



Learner Evaluation Form

On a scale of 1 (not at all) to 5 (very much), please rate the heart health session you have just participated in:

Did you find the session informative?	1	2	3	4	5
Was it easy to understand?	1	2	3	4	5
Was it interesting?	1	2	3	4	5
Was the presenter open to questions and discussion?	1	2	3	4	5
Did you find the session useful?	1	2	3	4	5

What did you like most about the session?

_____

_____

What did you like least about the session?

_____

_____

Any suggestions for improvement?

_____

_____

Thank you for your participation!

Smoking Cessation

A Worthwhile Venture !

A lunch-n-learn program guide.

By: Pamela R. Ward

Table of Contents

Purpose of this module:

This module has been developed in response to a need for well organized, interesting and efficient learning material on the topic of smoking cessation. It is intended to provide nurses facilitating lunch and learn sessions, with accurate, up-to-date information and supporting resources, which can be effectively presented with limited time preparation.

Structure and use of this module:

The nurse/facilitator is provided with learner objectives, along with all information and resources (including handouts and overheads) required to aid the learner in fulfilling these objectives. Other resources are referenced and may be used to support or enhance the material provided. Also, suggested learner activities are provided, which support the material and encourage participation on the part of the learner. The facilitator is notified by the following icons when to display overheads, when to carry out activities, and when to take special note of certain information:

 - display overhead

 - take special note

 -suggested activity

The content presented in this module is divided into distinct sections which serve to answer 9 main questions: 1) Why do people smoke? 2) What does smoking mean and what does tobacco consist of? 3) What are the immediate and long term effects of smoking? 4) What are the effects of second hand smoke on non-smokers? 5) What are the effects of smoking on the pregnant woman and the fetus? 6) How can one benefit from quitting smoking? 7) How does one decide to quit and strive to remain smoke-free? 8)What are some strategies available to aid in quitting smoking? and 9) What are the symptoms of nicotine withdrawal? A presentation of objectives associated with these questions encourages the learner to contemplate the topic before relevant information is provided.

This module is intended to be utilized in a typical 1-2 hour lunch and learn session. As noted on the title page, it is to be used as a guide to an interactive learning session. It is not intended to be presented in lecture format. The learner should be encouraged to share his or her views with regards to the given topic while becoming involved in the suggested activities. The facilitator is encouraged to use the module to initiate and promote discussion and interaction.

Considering this module covers sessions ranging from 1-2 hours in duration, some material is considered optional. This material is clearly marked. It is the responsibility of the facilitator to determine whether optional material should be

included, with consideration to time and the particular learning group. In a one hour session for example, much of the optional material may be omitted.

Learner Objectives

Following this learning session on the topic of smoking cessation, the learner will:

1) be able to discuss the reasons why people smoke.

2) have acquired a knowledge of what tobacco consists of and what smoking actually means.

3) be knowledgeable with regards to the immediate and long term effects of smoking.

4) display an understanding of the effects of second-hand smoke on the non-smoker.

5) have acquired an understanding of the effects of smoking on the pregnant woman and the fetus.

6) display an understanding of the symptoms of nicotine withdrawal.

7) be able to list the benefits of quitting smoking and discuss some strategies to aid in quitting.

Note: Objectives may be presented to the learner as handouts or overhead. An overhead is provided.

OVERHEAD# 1 

Cover: Smoking Cessation (this overhead is intended to be used while introducing oneself and the topic at hand. It should be placed on the projector before you begin this session).

OVERHEAD # 2 

Learner objectives(the objectives should be presented to the learner before the session begins).

OVERHEAD #3 

Why Do People Smoke?

There are a number of reasons why people smoke. The main reason people smoke on a regular basis is that they are addicted to the key ingredient in tobacco: *nicotine*. Nicotine is one of the most highly addictive drugs known to man. After smoking for a very short time people develop a physical need or craving for nicotine and the stimulating effects it has on the body. According to the Addiction Research

Council (1989), 8 out of 10 people who smoke more than one cigarette get hooked.

This addiction often becomes associated with certain behaviors or habits such as drinking coffee, driving the car, or socializing with friends, as well as certain feelings such as boredom, anger, fear, stress or excitement. These elements often become linked with smoking so that whenever the person is in the given situation, they feel the need for a cigarette, pipe or cigar.

Other people may be affected by advertising which portrays smokers as successful people in full control of their lives, while some may smoke merely to maintain their weight. Many teenagers and children in particular, are affected by peer pressure and the desire to fit into a group or look older and more mature. At this stage, many don't believe they can become addicted and feel they can quit at any time.

Suggested Activity: The learners should be provided with the handout entitled "The Why You Smoke Quiz". They should be given 5-10 minutes to complete this quiz. This should be followed by a discussion of why these people feel they smoke. This discussion should be limited to about 10 minutes

OVERHEAD #4 

What Does Smoking Mean and What Does Tobacco Consist of?

Tobacco is a green leafy plant which is native to North America. The leaves are generally dried to produce the tobacco we are accustomed to seeing in cigarettes, cigars and pipes. The difference in the tobacco for cigarettes, pipes and cigars, is mainly derived from the way they are dried. These tobaccos are then burned and inhaled into the lungs. The inhaled smoke is a mixture of thousands of chemicals; gases, liquid, and particles. In fact, over 4000 toxic chemicals have been found in tobacco smoke. Of this 4000, over 50 have been proven to be cancer causing agents. Some of the more familiar toxins found in tobacco smoke include: carbon monoxide, arsenic, ammonia, nicotine, tar, cyanide and formaldehyde.

These poisons are inhale directly into the lungs, where they are absorbed into the bloodstream and carried to the organs and tissues of the body. This places stress on the organs and the system as a whole.

OVERHEAD # 5 

What Are The Immediate Effects of Smoking?

Smoking has both immediate and long term effects which can be devastating to both the body and an individual's overall level of health. The immediate effects occur as soon as a person begins to smoke. They include:

1) **Mechanical damage**:

Hot smoke irritates and damages the tissues of the eyes, mouth, throat, airways and the lungs.

2) **Reduction in the action of the lung's protective structures:**

These broom-like structures called *cilia* normally act in a sweeping motion to filter out germs, mucous, and dirt from the lungs. When this action is reduced, the lungs become more susceptible to infection and damage from these foreign elements.

3) **Toxic compounds are immediately absorbed into the bloodstream:**

Nicotine for example, is carried throughout the body. In the brain, it triggers the release of certain chemicals which make us feel good. ***However***, it also results in narrowing of the blood vessels and

increased blood pressure, which increase the workload on the heart and lungs as they work to increase oxygen levels.

Another toxin, carbon monoxide, replaces oxygen in the red blood cells thus decreasing the amount of oxygen which flows to the lungs and thus to our organs and body tissues.

Note: Oxygen is a vital nutrient for our bodies. When we are deprived of oxygen, our heart and lungs work harder to supply our bodies with an adequate amount. Thus the heart rate, blood pressure, and breathing rate increase.

OVERHEAD # 6 

What Are The Long Term Effects of Smoking?

Smoking certainly has a devastating effect on the lives and well-being of habitual smokers. Smoking is the leading cause of preventable death in Canada at this time. According to Peto (1994), 45,718 deaths in Canada in 1995 can be attributed to smoking. That rate, as stated by Peto, is up from 23,264 deaths in 1975. An estimated 31% of Canadians were smokers in 1991, which means 6.5 million people were smokers. This number doesn't take into account the number of

people affected by the second-hand smoke delivered into the environment by these 6.5 million smokers.

Smoking over long periods of time produces:

1) <u>Increased mechanical damage</u>:

-Tissues become damaged making them more susceptible to breakdown and tumour growth.

- Cilia (lung's protective structures) may stop working completely. This allows bacteria or germs to enter the lungs more easily, increasing the chance of infection and disease.

2) <u>Increased damage from toxins:</u>

-*Carbon monoxide* builds up in the bloodstream, causing the heart and lungs to work much harder to supply oxygen to the body.

<u>Note:</u> The CO level in the blood of smokers ranges from 4-15 times that of non-smokers.

-*Tars*, the sticky substances found in tobacco smoke, form a sticky brown layer over the surface of the lungs, promoting bacterial growth and making it more difficult for oxygen to be absorbed from the

bloodstream. Blood vessels also become sticky, so that blood flow throughout the body is decreased (many smokers suffer from poor circulation especially to the hands and feet). This reduction in blood flow also makes the person more susceptible to heart problems due to blood clots and plaque formation.

3) Decreased physical endurance:

This results from the high levels of carbon monoxide in the body of a smoker. Smokers may find it difficult to catch their breath and have less energy for strenuous and often not-so-strenuous tasks.

4) Increased wrinkling of the skin:

This results largely from the high level of toxins in the system and the decrease in oxygen available to the cells.

5) Increased chance of heart attack and stroke:

This is the result of a combination of factors. Increased levels of carbon monoxide in the blood (thus meaning less oxygen in the blood), and narrowing of the arteries, mean the heart must work harder and

blood pressure increases. This promotes hardening of the arteries and blood clots. In fact, smokers are more than twice as likely to suffer from heart disease. According to the Canadian Council on Smoking and Health (1996), heart disease death rates are 70% higher for smokers than non-smokers. Sixteen thousand Canadians die every year from tobacco related heart diseases.

6) Increased chance of Cancer:

According to the Canadian Council on Smoking and Health (1996), tobacco is responsible for 30% of all cancer deaths. A smoker is 10 times more likely to get lung cancer than a non-smoker. Smoking is related to 85% of all lung cancers which kills 90% of its victims.

7) Increased chance of emphysema/chronic bronchitis:

Eighty to ninety percent of all emphysema and chronic bronchitis are caused by smoking.

8) Decreased fertility:

Often caused by low levels of oxygen and decreased circulation, smoking causes decreased sperm count in men, as well as higher chance of impotence and decreased chance of conceiving in women.

9) Increased chance of digestive ulcers:

Ulcers are more common in smokers than non-smokers and are less likely to heal, resulting in more deaths as a result.

OVERHEAD # 7 

What Are The Effects of Second-Hand Smoke on Non-smokers?

Second-hand smoke or environmental tobacco smoke, may be considered any smoke or combination of smoke from burning tobacco from a cigarette, pipe, or cigar and smoke which is exhaled from a smoker. This smoke, also known as sidestream smoke, has higher amounts of nicotine, tar ,and at least 43 more cancer-causing agents than the smoke inhaled by the smoker. According to the Surgeon General of the United States, this is largely related to the temperature of the smoke

as it mixes with the environmental air.

The effects of second-hand smoke are often greatly underestimated. Second-hand smoke is associated with:

1) <u>Increased chance of cancer:</u>

According to the Canadian Council on Smoking and Health (1996), exposure to second-hand smoke is estimated to cause 330 deaths annually in Canada from Lung cancer alone. The risk of death for non-smokers married to smokers for example, increases by 20-30% above those who are not regularly exposed to tobacco smoke.

2) <u>Aggravation of certain health problems:</u>

Second-hand smoke can aggravate and increase the severity of asthma, certain allergies (especially environmental allergies), heart disease, bronchitis, emphysema and other breathing problems.

3) <u>Increased health problems in children:</u>

Children are very vulnerable to second-hand smoke. Children who regularly breath this smoke suffer more from:

SIDS (sudden infant death syndrome)

ear infections

colds

bronchitis

asthma

Note: Any exposure to second-hand smoke even at low levels may be harmful to your health. Ordinary ventilation systems do not eliminate second-hand smoke. Also, simply opening a window doesn't work. Second-hand smoke can persist in the air for many hours after the tobacco has been smoked.

☞ This section re: objective #5 is optional. ☜

OVERHEAD # 8 

What Are the Effects of Smoke on The Pregnant Woman and the Fetus?

Pregnant women and the people around them must understand that the air they breath provides nourishment for the growing baby. If that air contains poisons and toxins, then the baby is receiving these same toxins. This may have devastating effects on the growing baby such as:

1) Decreased breathing exercises:

These exercises prepare the baby for breathing after birth. With just one or two cigarettes smoked by the mother, these exercises begin to decrease in number and frequency.

2) Increased risk of miscarriage or premature labour:

These pregnancies are often not carried to full term due to the toxins present in the mother's and baby's blood stream.

3) Babies develop at a slower rate:

These babies are often born prematurely, are of lower birth weight, and suffer from slowed development.

4) Babies develop breathing problems:

Many of these babies suffer from chronic chest infections, asthma and other breathing problems and have an increased chance of SIDS (sudden infant death syndrome).

OVERHEAD # 9 

How Can One Benefit From Quitting Smoking?

Although the damage done by smoking can be devastating, in many cases it can actually be reversed by quitting. The benefits of quitting are numerous and life changing. According to the Canadian Council on Smoking and Health (1996), the body begins the job of repairing itself within minutes of smoking the last cigarette.

After 20 minutes...

Blood pressure and pulse rate ↓ to normal.

Body temperature ↑ to normal.

After 8 hours...

Carbon monoxide in the blood ↓.

Oxygen in the blood ↑ to normal.

After 24 hours...

Chance of heart attack begins to ↓.

After 48 hours...

Food begins to smell and taste better.

After 2 weeks- 9 months...

Circulation improves.

Breathing clears, congestion clears.

Shortness of breath ↓ and smoker's cough fades away.

Energy and endurance ↑.

After 1 year...

Risk of heart disease is half that of a smoker.

After 5 years...

Chance of dying of lung cancer ↓ by ½.

Chance of stroke is reduced almost to the level of a non-smoker. (May take 5-15years).

After 10-15 years...

Chance of dying from lung cancer is about the same as a non-smoker.

Risk of other smoking related cancers ↓.

Risk of heart disease = that of non-smoker.

OVERHEAD # 10 

Besides the personal health related benefits of quitting smoking, there are a number of other benefits which may help motivate one to quit smoking. Some of these include:

- ↓ insurance costs.
- saving money.
- fewer wrinkles.
- not posing a health hazard to family, friends, and coworkers.
- your house, car, and clothes smell much better.

☞This section re: objective # 6 is optional.☜

OVERHEAD # 11

How Does One Decide to Quit and Strive to Remain Smoke-Free?

Quitting smoking is a decision which must be made for the right reasons if the person is to remain smoke-free. The individual must be motivated and be willing to keep trying even if he or she relapses and must attempt a number of times. The majority of the literature suggests that most ex-smokers succeeded after several attempts to quit.

Prochaska, J.O. & Declemente, C.C. (1982) suggest that quitting smoking follows a number of stages of change. These stages may be viewed as rungs on a ladder. They include:

1) **Pre-contemplation:**

- The individual does not intend to change his or her smoking behavior.
- He or she feels addicted and cannot quit.
- He or she will come up with various reasons not to quit.

2) **Contemplation:**

- The individual is interested in quitting and intends to do so in the next

six months.

- He or she is more open to the reality that smoking is causing health problems and is a major health risk.
- The individual is unsure of his or her ability to quit

3) **Preparation:**

- The individual is planning to quit within the next month.
- He or she is anxious about failing but is willing to try to quit.

4) **Action:**

- The person takes action and actually ceases to smoke.
- The risk of relapse is highest at this point.

5) **Maintenance:**

- This includes a smoke free period of 6 months to 5 years.
- The individual uses techniques to avoid smoking.

6) **Relapse:**

- Not everyone will experience this stage.
- This may occur at, during, or after any other stage.

- The individual may return to contemplation, preparation, or action stage.
- Some may return to pre-contemplation stage and give up.

7) **Termination:**

- The risk of relapse at this stage is 0%.
- The individual reaffirms him or herself as a non-smoker.

What are the Symptoms of Nicotine Withdrawal?

OVERHEAD # 12 

Nicotine withdrawal can be uncomfortable, disturbing and very difficult to cope with. Withdrawal symptoms include:

- strong physical and emotional craving for nicotine.
- difficulty concentrating.
- difficulty sleeping.
- ↑ appetite.

- irritability, impatience, anxiety.

- headaches & lightheadedness.

- sweating.

- tremors.

- fatigue.

Because of these symptoms, it is important that the individual who is trying to quit have some strategies available to him or her to aid in quitting. There are a numbers of strategies in existence which do just that. These range from self-help type of strategies such as going "cold turkey" to programs of behavior modification, to nicotine replacement systems, hypnosis, and acupuncture.

Note: There is no "magic solution" or " quick fix" when it comes to quitting smoking. No one program is the best. The choice of cessation strategies depends on the individual and his or her needs or strengths.

OVERHEAD # 13 

What Are Some of The Strategies Available to Aid in Quitting?

1) Cold Turkey:

-Throw away the cigarettes and refuse to smoke again.

2) Assessing and Addressing Your Smoking Pattern:

-The Canadian Cancer Society (1993) recommends the individual keep a tally of his or her smoking patterns for at least a week. This includes when you smoke, how many cigarettes (or cigars, or pipes) you smoke at a given time, what you are doing when you smoke, whether it be driving, drinking coffee, sitting with friends etc. Once you are aware of which behaviors are most associated with smoking you may choose to avoid them or try to disassociate smoking with such behaviors by doing something else (chewing gum, eating carrot sticks, doodling and so on).

Suggested Activity: Provide the learner with the handout entitled "Assessing Your Smoking Triggers". Allow 5-10 minutes for completion of this questionnaire. This should be followed by a discussion on how to address the learner's smoking triggers.

3) Gradually Reduce the Number of Cigarettes or Smoking Sessions:

- Choose to decrease the amount smoked by a given number each day or week until you are no longer smoking.

4) Nicotine Replacement Therapy:

- This is a system which supplies the body with a certain level of nicotine to reduce the physical and sometimes emotional symptoms of nicotine withdrawal. They may be used in conjunction with other cessation strategies.

Traditionally, nicotine replacement therapies have been available in two forms:

1) Nicotine Gum: this may be chewed when the person desires a smoke. This gum allows the nicotine to be absorbed through the lining of the mouth to decrease withdrawal symptoms. The goal is to decrease the frequency and duration of gum use as withdrawal symptoms subside. Eventually, within 6 months of use this gum should be discontinued. This gum should not be chewed in conjunction with smoking.

2) Nicotine Patch: this patch is stuck to the skin much like a bandaid and allows nicotine to be absorbed through the skin. It is available in different strengths and may be prescribed in decreasing strengths over time in order to gradually wean the individual from nicotine. It is now available over the counter, however it is advised that one consult his or her physician prior to use.

There is a new system of nicotine replacement which may be soon introduced in Canada. It involves the use of a nicotine inhaler. This inhaler, shaped like a cigarette, allows the individual to inhale nicotine to reduce the physical symptoms of withdrawal, while holding the cigarette-like inhaler to reduce emotional and habitual symptoms of withdrawal.

5) Formal Smoking Cessation Programs:

-There are a number of programs offered within the community in which trained educators and counsellors provide people with education, support and resources to assist them to stop smoking. Such programs involve strategies to quit and were discussed earlier, along with daily

diaries and stop smoking contracts. They also promote stress reduction and coping techniques, while emphasizing social support. These programs are offered by a number of nonprofit organizations including The Heart and Stroke Foundation, Lung Association, and the Canadian Cancer Society.

6) Hypnosis:

-This technique is controversial to say the least and its success rate has not proven to be as high as other programs.

7) Acupuncture:

-This ancient technique is being used to ease the desire for nicotine. It involves tiny needles inserted into specific areas in the body to stimulate nerves which signal the brain to release natural chemicals which the craving for nicotine.

8) Drug therapy:

-There is presently a drug called Zyban, which although not yet widely used in Canada, is being prescribed by doctors in the U.S. to aid in

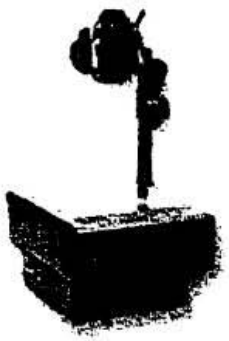
smoking cessation. This drug is normally taken over a 7 to 12 week period and reduces nicotine withdrawal symptoms and the craving to smoke. As with any prescription medication, it does have a number of side effects and it may not be suitable for certain people. Individuals should consult their physicians with questions regarding this treatment.

Remember!

Difficulty quitting smoking does not indicate weakness. Smoking is an addiction which is not easy to overcome. The key is to become educated with regards to the harmful effects on yourself and the people around you, and the resources available to help you quit. With this information, you can begin the period of behavior change which will eventually enable you to become smoke-free.

Appendix A

OVERHEADS



Overhead Outline

Overhead #1

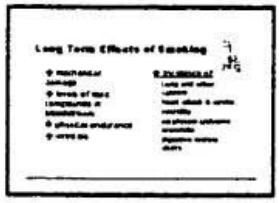
Overhead# 2

Overhead# 3

Overhead# 4

Overhead # 5

Overhead# 6



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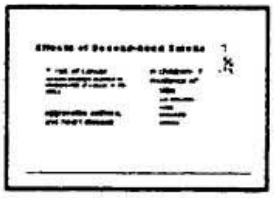
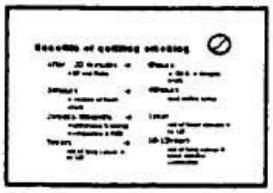


Overhead# 8

Overhead # 9



Overhead# 10

Overhead# 11

Overhead# 12

Overhead# 13

SMOKING CESSATION

A WORTHWHILE VENTURE!

Objectives

Following this session the learner will :

- be able to discuss the reasons why people smoke.
- have acquired a knowledge of what tobacco consists of and what smoking actually means.
- be knowledgeable with regards to the immediate and long term effects of smoking.
- display an understanding of the effects of second hand smoke on non-smokers.
- have acquired a knowledge of the effects of smoking on the pregnant woman and fetus.
- display an understanding of the symptoms of nicotine withdrawal.
- be able to list the benefits of quitting smoking and discuss some strategies to aid in quitting.

Why Do People Smoke?

- nicotine addiction
- habit
- feelings such as stress, anger, boredom
- to feel in control
- maintain body weight
- peer pressure

What Does Tobacco Consist Of?

- **Tobacco smoke-**
  - over 4000 toxic chemicals
  - > 50 of these are cancer causing

Immediate Effects of Smoking

- Mechanical damage
- Reduction of lung's protective structures
- Absorption of toxic compounds into bloodstream

Long Term Effects of Smoking

- ↑ mechanical damage
- ↑ levels of toxic compounds in bloodstream
- ↓ physical endurance
- ↑ wrinkles

- ↑ <u>Incidence of</u>
  - heart attack & stroke
  - Lung and other cancers
  - emphysema/chronic bronchitis
  - infertility
  - digestive system ulcers

Effects of Second-hand Smoke

- ↑ risk of cancer
  (ex:non-smokers married to smokers-risk of cancer ↑ 20-30%)
- aggravates asthma, and heart disease
- in children- ↑ incidence of:
  - SIDS
  - ear infection
  - colds
  - bronchitis
  - asthma

Effects of Smoke on The Pregnant Woman and Fetus

- ↓ baby's breathing exercises
- ↑ risk of miscarriage/premature labor
- ↓ birth weight
- ↓ rate of development
- ↑ chance of breathing problems
  - ex: SIDS, Asthma

Benefits of Quitting Smoking

- After.. 20 minutes →
  - ↓BP and Pulse
  - ↑body temp
- 24hours →
  - ↓ chance of heart attack
- 2weeks-9months →
  - ↑endurance & energy
  - ↓congestion & SOB
- 5years →
  - risk of lung cancer ↓ by 1/2
- 8hours
  - ↓ CO & ↑ Oxygen levels
- 48hours
  - food tastes better
- 1year
  - risk of heart disease ↓ by 1/2
- 10-15years
  - risk of lung cancer & heart attack= nonsmoker

Other Benefits of Quitting

- ↓insurance costs
- ↑savings
- ↓ wrinkles
- ↑health of family and friends
- home, car and clothes smell better

Stages of Change-
Kicking the Habit !

- Pre-contemplation
- Contemplation
- Preparation
- Action
- Maintenance
- Relapse
- Termination

Prochaska & Declemente (1982)

Symptoms of Nicotine Withdrawal

- physical & emotional craving
- difficulty concentrating
- difficulty sleeping
- ↑ appetite
- irritability& impatience
- headaches & light headedness
- sweating & tremors
- fatigue

Cessation Strategies

- Cold turkey
- Assessing and addressing smoking pattern
- Gradual ↓ in # of cigarettes
- Nicotine replacement therapy
- Formal cessation programs
- Hypnosis &/or acupuncture
- Drug therapy

SUGGESTED ACTIVITIES

The Why Do You Smoke Quiz

(Canadian Cancer Society, 1993)

Please read each statement and circle the number which best suits how you feel about smoking.

	Never	Seldom	Occasionally	Frequently	Always
A. I smoke in order to keep myself from slowing down.	1	2	3	4	5
B. Handling a cigarette is part of the enjoyment of smoking it	1	2	3	4	5
C. Smoking is pleasant and relaxing.	1	2	3	4	5
D. I light up when I feel angry.	1	2	3	4	5
E. When I run out of cigarettes, I find it almost unbearable until I get them.	1	2	3	4	5
F. I smoke automatically without even being aware of it.	1	2	3	4	5
G. I smoke to perk myself up.	1	2	3	4	5
H. Part of the enjoyment of smoking comes from the steps I take to light up.	1	2	3	4	5
I. I find cigarettes pleasurable.	1	2	3	4	5
J. When I feel uncomfortable or upset about something, I light up.	1	2	3	4	5
K. I am very much aware of when I am Not smoking.	1	2	3	4	5
L. Sometimes I light a cigarette without realizing I still have one burning in the ashtray.	1	2	3	4	5

M. I smoke cigarettes to give me a lift.	1	2	3	4	5
N. When I smoke, part of the enjoyment is watching the smoke as I exhale it.	1	2	3	4	5
O. I want a cigarette most when I am comfortable and relaxed.	1	2	3	4	5
P. When I feel blue or want to take my mind off cares and worries, I smoke.	1	2	3	4	5
Q. I get a real gnawing hunger for a cigarette when I haven't smoked for a while.	1	2	3	4	5
R. I've found a cigarette in my mouth and didn't remember putting it their.	1	2	3	4	5

To find out why you smoke, enter the number you circled for each statement in the space provided below. For example, put A over line A, the number for statement B over line B, and so on. Total the scores and write them in the box under each reason. For example, under Stimulation, you add the scores from lines A, G, and M.

Stimulation	Handling
A:_____	B:_____
+ G:_____	+ H:_____
M:_____	N:_____
= _____	= _____

Pleasure	Relaxation
C:_____	D:_____
+ I:_____	+ J:_____
O:_____	P:_____
= _____	= _____

Craving	Habit
E:_____	F:_____
+ K:_____	+ L:_____
Q:_____	R:_____
= _____	= _____

Scoring:

A sum of 11 or more for any reason indicates it's one of the reasons why you smoke. The higher the score the more powerful the reason.

1) Stimulation: a high score suggests you believe cigarettes increase your energy level and keep you alert.

2) Handling: a score of 11 or more shows you enjoy handling objects, especially smoking accessories and cigarette packages.

3) Pleasure: a high score here indicates you enjoy smoking when you are comfortable with yourself and feeling good.

4) Relaxation: A high score here means stress brings on the urge to smoke. You feel you have to smoke to relax.

5) Craving: A high score here indicates that you are chemically addicted to nicotine. Your body craves this chemical.

6) Habit: A score of 11 or more reveals you get little enjoyment from smoking. You do it out of habit. You may often light cigarettes without being aware of it.

Note: Scores of 10 or less suggest you may not be a heavy smoker or may not be smoking for long. It may be easier for you to quit than one who's score was 11 or higher for than one reason.

Assessing Your Smoking Triggers

Certain situations may trigger the desire to smoke more than others. Many smokers may not realize that these situations are affecting or enhancing their desire to smoke. Assessing and recognizing these triggers is the first step in learning to break the link between these conditions and your habits.

Each situations describes a smoking trigger. Circle the number which describes this situations.

	No desire	Seldom	Occasionally	Frequency	Always
1) in social situations- when others are smoking	1	2	3	4	5
2) Driving the car	1	2	3	4	5
3) Talking on the phone	1	2	3	4	5
4) When drinking coffee/soda	1	2	3	4	5
5) Watching TV	1	2	3	4	5
6) Feeling stressed, angry, or nervous	1	2	3	4	5
7) Feeling bored	1	2	3	4	5
8) After meals	1	2	3	4	5
9) Upon waking	1	2	3	4	5
10) When hungry	1	2	3	4	5
11) Working around the house	1	2	3	4	5
12) When unhappy	1	2	3	4	5
13) When excited	1	2	3	4	5

Scoring:

The higher your rating for a given situation, the more likely that it triggers your desire to smoke. Once you are aware of these triggers, you may take the steps to address them (through avoidance or change of routine).

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Notable Web Sites

http://tobacco.arizona.edu/

- This site is presented by the Arizona Program for nicotine and tobacco research. It provides up-to-date information on nicotine and tobacco research and how smoking affects the individual and those around them. It also provides a number of strategies for prevention and cessation.

www.quitsmokingsupport.com

- This site provides a number of resources for the person who wishes to quit smoking, including links, references, and discussion groups and chat rooms for those seeking support.

www.quitnet.org/

- This site provides a wealth of information on smoking cessation, as well as current news in tobacco research and numerous helpful links to sites provided by the cancer society, the lung association and other reputable organizations.

Pamphlets and other resources may be ordered through:

The Canadian Cancer Society

Heart and Stroke Foundation

The Canadian Lung Association

Alcoholism and Drug Addiction Research Foundation
33 Russell St.,
Toronto, Ontario
M5s 2S1

Local Community Health Resource Catalogue

Smoking Cessation: A Worthwhile Venture!

Why Do People Smoke?

Smoking is a behavior which has been common to our society for many years. Unfortunately, it has become so interwoven in our culture, that people continue to smoke despite the knowledge that it is a major threat to health and well being. There are a number of reasons why people smoke, the main reason being addiction to nicotine. Often this addiction is associated with other behaviors such as drinking coffee, socializing with friends, driving, and talking on the telephone. Other reasons include peer pressure, boredom, stress and even weight control.

What is Tobacco and What Does it Consist of?

Tobacco is a green leafy plant, native to North America. The leaves of this plant are dried and smoked for their stimulating effect on the body. This smoke is very toxic in nature, containing over 4000 toxic chemicals. Of this 4000 chemical over 60 are known cancer-causing agents. Some of the more familiar agents in tobacco include, carbon monoxide, ammonia, hydrogen cyanide, formaldehyde, tar, and nicotine.

How Does Smoking Effect Us?

Smoking has become the leading cause of preventable death in Canada. It effects us immediately after smoking the first cigarette, cigar or pipe. It damages the delicate tissues of the mouth, airways, and lungs. The lungs become exposed to harmful agents, bacteria, and dirt, increasing the chance of illness and disease. Toxic chemicals are almost instantly absorbed into the bloodstream, reducing overall oxygen levels and increasing blood pressure.

Over a longer period of time, more permanent damage can occur to the tissues of the mouth and lungs, increasing the chance of cancer. The protective mechanisms of the lungs may shut down completely, while carbon monoxide levels increase to up to 15 times that of a non-smoker. Chance of cancer and heart disease increase drastically while energy and endurance decrease.

How Does Second-Hand Smoke Effect Us?

Second-hand smoke is considered any smoke or combination of smoke from burning tobacco including cigarette, cigar or pipe. Its affects have been greatly underestimated. Environmental tobacco smoke as it is called has devastating effects on those exposed; the most vulnerable of those being children. This smoke increases the risk of heart disease as well as aggravating breathing disorders. It has also been linked to an increased incidence of SIDS (sudden infant death syndrome) in infants.

How Does Tobacco Smoke Effect Pregnant Women and the Fetus?

Pregnant women who smoke or who are exposed to second-hand smoke on a regular basis may inflict great harm on the child they are carrying. These babies do not develop as quickly as others and tend to be lower have lower birth weights. They suffer from more breathing problems, including asthma and chest infections, and have a much higher chance of dying from SIDS (sudden infant death syndrome).

What Are the Benefits Of Smoking and Some strategies to Help One Succeed?

There are of benefits to quitting smoking. The pros certainly outnumber the cons. The major benefit is improved health and decreased chance of chronic and life threatening illness. Quitting smoking may also improve the health of those around you; family, friends, and coworkers, while also saving you a great deal of money.

Once a person has made the decision to quit smoking, they can choose from a number of cessation strategies. These range from going "Cold Turkey", to accessing and addressing one's smoking habits, gradually decreasing the number of cigarettes smoked, hypnosis, acupuncture, nicotine replacement systems or formal smoking cessation programs.

References:

About smoking. (1989). Addiction research council: Toronto.

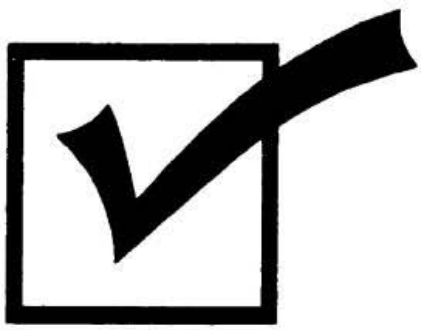
How to be a happy ex-smoker: A do-it-yourself guide to quit smoking. (1993). Canadian Cancer Society.

The health benefits of smoking cessation: A report of the surgeon general. (1990). Rockville: U.S. Dept of Health and Human Services.

Tobacco: the facts.(1996). Canadian Council on Smoking and Health.

Tobacco use cessation programs: an inventory of self-help and group programs. (1996). Ottawa: Health Canada.

Learner Evaluation Form



Learner Evaluation Form

On a scale of 1 (not at all) to 5 (very much), please rate the smoking cessation session you have just participated in:

Did you find the session informative?	1	2	3	4	5
Was it easy to understand?	1	2	3	4	5
Was it interesting?	1	2	3	4	5
Was the presenter open to questions and discussion?	1	2	3	4	5
Did you find the session useful?	1	2	3	4	5

What did you like most about the session?

_____

_____

What did you like least about the session?

_____

_____

Any suggestions for improvement?

_____

_____

Thank you for your participation!

Osteoporosis:

The Silent Thief !

A lunch-n-learn program guide.

By: Pamela R. Ward

Table of Contents

Purpose of this module:

This module has been developed in response to a need for well organized, interesting and efficient learning material on the topic of osteoporosis. It is intended to provide nurses facilitating lunch and learn sessions, with accurate, up-to-date information and supporting resources, which can be effectively presented with limited time preparation.

Structure and use of this module:

The nurse/facilitator is provided with learner objectives, along with all information and resources (including handouts and overheads) required to aid the learner in achieving these objectives. Other resources are referenced and may be used to support or enhance the material provided. Also, suggested learner activities are provided, which support the material and encourage participation on the part of the learner. The facilitator is notified by the following icons when to display overheads, when to carry out activities, and when to take special note of certain information:

 - display overhead

 - take special note

 -suggested activity

The content presented in this module is divided into distinct sections which serve to answer 5 main questions: 1) What is osteoporosis? 2) Who is at risk? 3) What are the signs and symptoms? 4) How can osteoporosis be prevented? and 5) How can osteoporosis be treated? A presentation of objectives associated with these questions encourages the learner to contemplate the topic before relevant information is provided.

This module is intended to be utilized in a typical 1-2 hour lunch and learn session. As noted on the title page, it is to be used as a guide to an interactive learning session. It is not intended to be presented in lecture format. The learner should be encouraged to share his or her views with regards to the given topic while becoming involved in the suggested activities. The facilitator is encouraged to use the module to initiate and promote discussion and interaction.

Considering this module covers sessions ranging from 1-2 hours in duration, some material is considered optional. This material is clearly marked. It is the responsibility of the facilitator to determine whether optional material should be included, with consideration to time and the particular learning group. In a one hour session for example, much of the optional material may be omitted.

Learner Objectives

Following this learning session on the topic of osteoporosis the learner will:

1) be able to define osteoporosis.

2) be able to identify who is at risk for osteoporosis and what portion of the population is presently suffering from osteoporosis.

3) be aware of the criteria for screening for osteoporosis.

4) be knowledgeable with regards to the signs and symptoms of osteoporosis.

5) have acquired an understanding of how osteoporosis can be prevented and treated.

6) be aware of ways in which pain related to osteoporosis can be reduced.

Note: Objectives may be presented to the learner as handouts or overhead. An overhead is provided.

OVERHEAD# 1 

Cover: Osteoporosis (this overhead is intended to be used while introducing oneself and the topic at hand. It should be placed on the projector before you begin this session).

OVERHEAD # 2 

Learner objectives(the objectives should be presented to the learner before the session begins).

OVERHEAD #3 

What is Osteoporosis?

Definition:

Osteoporosis is a disease in which bones literally thin out or become less dense. This means they become weaker and brittle, resulting in an increased chance of fracture even with the slightest accident or trauma. Bones may become so fragile

that they break spontaneously without any trauma at all.

OVERHEAD# 4 

Osteoporosis remains the most common metabolic bone disease in the western world, affecting over ***20 million*** North Americans. In one year, osteoporosis is associated with over 1.5 million fractures in North America and an annual cost of 10 billion dollars for medical and rehabilitation fees. This doesn't include the cost of human suffering, disability, dependence and premature death. This rate is growing every year as the population ages. It is estimated that by the year 2050, the number of hip fractures in North America, related to osteoporosis will rise from 210,000 today to 750,000 per year.(Cooper et al, 1992).

The most common fractures are:

1) hip

2) wrist

3) vertebral (spinal)

Hip fractures tend to have the most devastating results:

- 35% never walk again independently.
- 25% are admitted for permanent residency to nursing homes.
- Death may result in many cases within a 4-6 month period:
  - 5% for those less than 65
  - 10% for those 65 to 76
  - 20% for those over 80

(Schneider& Rowe, 1996)

OVERHEAD # 5 

There are two main types of osteoporosis:

1) Primary: most common form consisting of 95% of cases. A decrease in bone mass occurs without any known identifiable cause.

2) Secondary: less common form consisting of 5% of cases. A decrease in bone mass in which the underlying cause can be identified (usually some disorder or disease process).

Suggested activity: Provide the learner with the handout entitled "Osteoporosis Self Assessment". The learner should be given about 5 minutes to complete this questionnaire. This should be followed by the discussion of who is at risk for osteoporosis provided below.

OVERHEAD# 6 

Who is at Risk?

It is not known exactly why some people get osteoporosis and some do not, but a number of factors have been identified. These include:

1) ***Gender***:

Both men and women are affected by osteoporosis. However, the rate of incidence in women is much higher due to a number of contributing factors. Women tend to suffer largely from primary osteoporosis while men tend to suffer largely from secondary osteoporosis (resulting from low testosterone, low body weight and other disorders).

The risk of fractures resulting from osteoporosis is 2-4 times greater in women, while the risk of vertebral (back) deformity is 8 times that of men. Ultimately, women will lose 40-50% of their bone mass; losing as much as

8% per year for a period of time after menopause. The maximum rate of loss in men is 3% per year. Men usually have more bone mass to begin with (30%-50% more than women) and begin to lose it later in life. (Christiansen & Gryzbowski, 1993).

2) *Age:*

All people after middle age lose bone mass to some degree.

3) *Race:*

Caucasians and Asians tend to lose bone mass more quickly than African Americans. African Americans have a higher bone mass and lower fracture incidence (Murray et al,1996).

4) *Hormone Levels:*

Estrogen, a female hormone released from the ovaries, appears to inhibit the action of cells which break down bone so that women do not lose much bone mass before menopause, when the body is still producing estrogen. After menopause, when estrogen's protective properties are no longer present, these destructive cells begin to destroy bone. If this destructive process is not inhibited or balanced by other bone building processes, then bone mass decreases. Also, low levels of the male hormone, testosterone in men can result in bone loss. Bone loss can also occur when a gland called the

parathyroid releases too much hormone. This hormone breaks down bone.

5) *Low body weight:*

Bone loss is much greater in marathon runners and women suffering from anorexia because these women often don't have periods. This results in very low levels of estrogen and thus less protection against bone destroying cells.

6) *Low calcium intake:*

Low calcium intake results in calcium which is needed for vital bodily functions to be taken from the bone. Calcium intake is considered low if it is less than 800mg daily. According to Cassel et al (1996), 75% of U.S. women are taking less then this recommended daily intake.

7) *Family history:*

Osteoporosis may be passed on through familial tendencies toward lower bone mass.

8) *Inactivity:*

Exercise which places pressure or weight on the bones, such as walking, jogging or playing tennis, promotes the building and maintenance of bone. Lack of such weight bearing exercise results in increased bone loss.

9) ***Smoking and alcohol:***

Both have been linked to bone loss and low bone mass. This may result from decreased oxygen flow in the blood in smoking and often due to nutritional deficiencies in alcoholics.

10) ***Excessive sodium and protein intake:***

These deplete the calcium taken into the body.

11) ***Medications:***

Certain anti-seizure and steroid medications can cause accelerated bone loss.

OVERHEAD# 7 

What are the Signs and Symptoms of Osteoporosis?

Osteoporosis is often referred to as the "Silent Thief" because the signs and symptoms are very gradual and most often not obvious until bone mass has fallen to a level in which fractures can occur with very little trauma. The signs and symptoms include:

1) ***Fractures:*** breaking of bones, usually in the hip, wrist or vertebrae (Spine). Some fractures (microfractures) are so small they may go undetected.

2) ***Change in body shape:*** a stooped appearance, rounded shoulders (Dowager's hump), caused by fractures and compression of the vertebrae. This can result in a loss of height of up to 6 inches (15 cm).

3) ***Pain:*** most pain from osteoporosis results directly from fractures. The pain can be temporary (acute) when a fracture occurs or ongoing (chronic) resulting from tiny fractures or muscles spasms resulting from the unnatural curvature of the spine.

OVERHEAD# 8 

Diagnosing Osteoporosis:

Because we can't rely on signs and symptoms to provide us with early detection of osteoporosis, individuals and their doctors must evaluate the level of risk and determine if screening is necessary. Screening involves a measurement of bone thickness or density. This process is called ***bone densitometry***. This is the most reliable means of diagnosing osteoporosis. It involves lying on a table for 10-

20 minutes while a scanner x-rays your spine and hips.

This is a special type of X-ray which is preferred over regular X-rays or radiographs which are not sensitive enough to detect osteoporosis until at least 30% of the bone is lost. This type of X-ray involves a very low level of radiation, and is safe and painless.

☞This section re: who should be tested for osteoporosis is optional.☜

Suggested activity: Considering the risk factors previously discussed, learners should gather in groups of 2-3 to discuss who they think would qualify to be tested for osteoporosis and why. They should be given 10-15 minutes to document their ideas. This should be followed by a discussion of criteria for screening.

OVERHEAD # 9 

Who Should be Tested for Osteoporosis?

1) menopausal women considering estrogen replacement therapy.

2) those taking certain steroid or anti-seizure medication which may reduce bone mass.

3) those in whom osteoporosis is suspected due to spinal deformities or fractures.

4) those who have already been diagnosed with osteoporosis and wish to have bone density re-accessed.(this would indicate the rate at which the bone loss is progressing.)

5) those suffering from a condition called hyperparathyroidism in which a gland called the parathyroid is overactive resulting in increased bone breakdown.

6) those who are undergoing chemotherapy in which bone loss is anticipated.

7) younger women suffering from amenorrhea (missed or absent periods).

8) men with low testosterone, a male hormone which serves to inhibit bone loss.

OVERHEAD # 10 

How Can Osteoporosis be Prevented?

The devastating effects of osteoporosis can often be prevented. Unfortunately many people are either unaware of the severity of this disorder (thinking of it as just "an old woman's disease"; something to worry about later in life) or they believe it is inevitable and not preventable.

According to Stevenson & Marsh (1992), "many women are not aware of the condition, do not appreciate the way it may affect their lives, and most importantly do not understand it is preventable" (p.4).

The key to prevention is *knowledge*. If people know what osteoporosis is and its implications with regards to their health, they are more likely to take measures to reduce the risk of osteoporosis.

Three major steps in preventing osteoporosis include:

1) adequate calcium intake: at least 800mg of calcium daily for premenopausal women, 1200mg daily for men, and 1500-2000 for teens and postmenopausal women. This should come primarily from diet but may be achieved with the help of calcium supplements. (For ex: 8 ounces of milk or 1 cup of yogurt= 300mg of calcium.

NOTE: It's never too late to increase the calcium in your diet It's beneficial at any age.

2) exercise: weight bearing exercise such as walking, running, and tennis, can increase muscle mass, improve calcium balance, and increase bone mass by encouraging bone remodeling and formation. It also serves to improve coordination and balance, aiding in the prevention of falls.

NOTE: Exercise must be undertaken on a regular basis because bone loss can resume just as quickly when exercise stops. Too much exercise can also be detrimental. Women with very low body weight (ex: marathon runners) may suffer from amenorrhea in which they do not have menstrual periods or miss them frequently. This lowers estrogen levels to the point where bone begins to breakdown.

3) Estrogen replacement therapy: estrogen functions to inhibit cells which break down bone. Once menopause occurs the ovaries no longer secrete estrogen, thus putting the women at risk for rapid bone loss. Women should be aware that estrogen replacement can reduce bone loss significantly, reducing the risk of hip fracture by up to 50%. This therapy involves artificial replacement of estrogen taken in pill form or through skin patches in which estrogen is absorbed through the skin.

As with any treatment there are *benefits and risks*. Although estrogen replacement therapy reduces the risk of osteoporosis and heart disease significantly, while relieving menopausal symptoms, it may increase one's risk for breast cancer and endometrial cancer (the nurse should take time to explain endometrial cancer). For this reason women with a history of these

diseases or those who have 1st degree relatives (mother or sister) who have suffered from these diseases, cannot undergo this therapy.

According to Cassel et al (1996) "the majority of studies support no significant increase in breast cancer risk in women receiving postmenopausal estrogen therapy" (p. 425).

NOTE: Both patient and doctor must weigh the risk of osteoporosis and heart disease against the risk of developing breast or endometrial cancer when considering this treatment.

☞This section relating to objective # 5 (treatment) is optional.☜

(The facilitator may briefly explain the importance of calcium and inform the learner that there are a number of drug treatments which can be discussed with his or her doctor.)

OVERHEAD # 11

How is Osteoporosis Treated?

Once osteoporosis has been diagnosed, immediate and ongoing treatment is essential to decrease the rate of further bone loss. The type of treatment depends on:

- the persons past medical history.
- the degree of bone loss (established through bone densitometry).
- expert judgement on the part of doctor.

Types of treatment include:

1) Estrogen replacement therapy: Although this therapy may be used to prevent osteoporosis, it may also be used as a treatment for those already diagnosed with it, to slow the rate of further bone depletion. If the person is post-menopausal or surgically menopausal (ovaries have been surgically removed), estrogen replacement therapy, as discussed earlier, is often the common treatment.

2) Vitamin D: This enhances gastrointestinal (or digestive tract) absorption of calcium and inhibits a hormone secreted by the parathyroid gland (which increases depletion), thus promoting bone building.

Many people, as they age, become deficient in vitamin D due to:

- ↓ intake
- lack of exposure to sunlight
- ↓ ability of kidneys to metabolize vitamin into a useable form.

This may be achieved through the intake of milk, egg yolks and shell fish. People in areas of low levels of sunlight or low milk intake may require supplementation.

3) Calcitonin: This substance is a hormone secreted by the thyroid gland which functions to increase calcium absorption into bone and facilitates vitamin D production. Patients are often treated with human calcitonin or salmon calcitonin which is more effective. There are few side effects. However, if used for prolonged periods of time, resistance may develop in which the drug becomes less effective.

4) Calcium: adequate calcium intake is essential since our largest calcium reserve is located in the skeleton. Whenever dietary intake of calcium is inadequate, calcium is drawn from the bones often resulting in skeletal deformation.

Recommended intake of calcium for treatment of osteoporosis is 1500-2000

mg daily (usually calcium citrate because this is easier on the stomach and digestive tract).

NOTE: Even if one consumes the recommended daily allowance (RDA) of calcium, if his or her diet is very high in protein and/or sodium, this may deplete the calcium supply. Also, those with a history of kidney stones may need to be screened regularly for stones.(Kidney stones are actually calcium deposits.)

5) Biphosphonates: These medications bind to the surface of the bone and inhibit bone breakdown. They increase bone density by 3% per year. These drugs are currently under study and not commonly prescribed. More needs to be known before they are widely prescribed.

6) Fluoride: this substance has been seen to increase bone mass but produces digestive tract problems in 20-60% of those who use it.

NOTE: Some of these treatments may be taken in conjunction with each other. It is the decision of the doctor and informed patient as to which treatment should be used.

OVERHEAD# 12 

Dealing with the pain of osteoporosis:

The pain resulting from osteoporosis can be chronic and debilitating. Patients need to confer with their doctors to determine which mode of pain relief will be most effective for them.

Some pain reducing strategies include:

1) ***Heat and ice*:**

Cold or heat applied to the affected site may have a comforting effect.

2) ***TENS*-Transcutaneous Electric Nerve Stimulation:**

This system utilizes electrical impulses to provide temporary relief from pain.

3) ***Rest and sleep***:

Rest periods on a firm mattress at least twice daily with proper night time rest increases one's ability to cope with pain. Avoidance of caffeine and alcohol helps to promote sleep.

4) *Braces and support*:

These are to be used temporarily to relieve pain by shifting support from the spine. Prolonged use may result in muscle weakness and dependence on brace.

5) *Medications*:

Most doctors recommend ASA or acetaminophen as part of a pain management program. Acetaminophen has been seen to be less harmful to the digestive tract.

6) *Acupuncture*:

This involves tiny needles inserted into specific area in the body to stimulate nerves which signal the brain to release a natural pain reliever which reduces pain.

6) *Social Support:*

Those people who have social support tend to cope more positively and productively with the pain of osteoporosis.

(Strategies recommended by the Osteoporosis Society of Canada)

Remember!

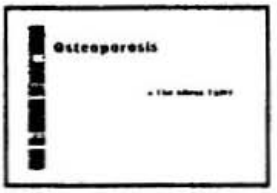
Osteoporosis is a disease which is very common in our society today. Unfortunately, it has become known as "an old woman's disease", which many think is not preventable. People must become aware that this is not the case. People should not be sentenced to a life of pain and disability as seniors when this can be prevented.

It is important that individuals become educated with regards to the risks for osteoporosis and how these risks can be controlled and reduced to prevent the development of this debilitating disease. Also, people suffering from osteoporosis should become aware that there is treatment available which can drastically slow down the rate of bone loss and reduce the risk of fracture and deformity.

OVERHEADS

Outline of Overheads

Overhead# 1



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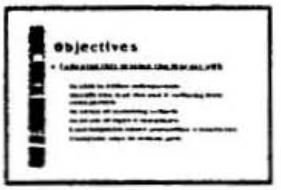

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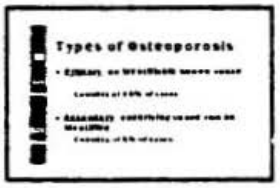

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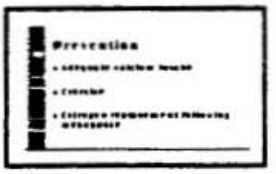

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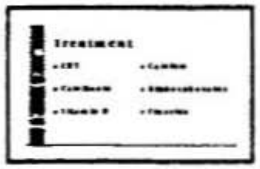


Overhead# 12

Osteoporosis

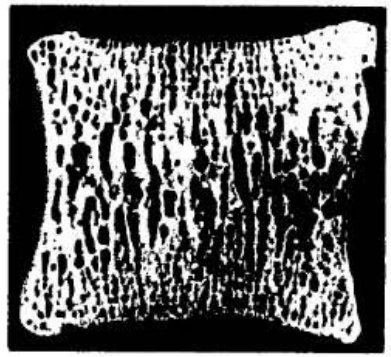
- **The Silent Thief**

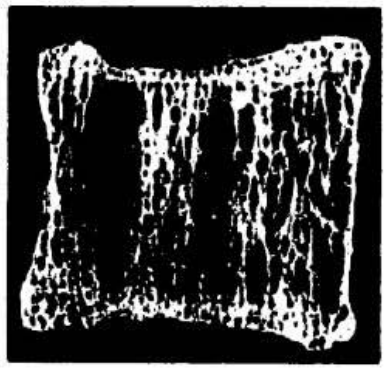
Objectives

- **Following this session the learner will:**
  - be able to define osteoporosis.
  - be able to identify who is at risk and number suffering from osteoporosis.
  - be aware of screening criteria.
  - be aware of signs & symptoms.
  - be knowledgeable about prevention & treatment.
  - recognize ways to reduce pain.

Osteoporosis

- A disease in which the bone literally thins out or becomes less dense, resulting in weak brittle bones which break or fracture with very little trauma.





Statistics

- 1.5 million fractures in North America in one year (hip, vertebrae and wrist)
- $10 billion medical costs
- hip fractures will↑ from 210,000 per year to 750,000 by 2050
- 35% never walk independently
- 25% admitted to nursing home
- 5-20% death within 6months

Types of Osteoporosis

- **Primary:** no known identifiable cause.
  - Consists of 95% of cases.
- **Secondary:** underlying causes(s) can be identified.
  - Consists of < 5% of cases.

Risk Factors

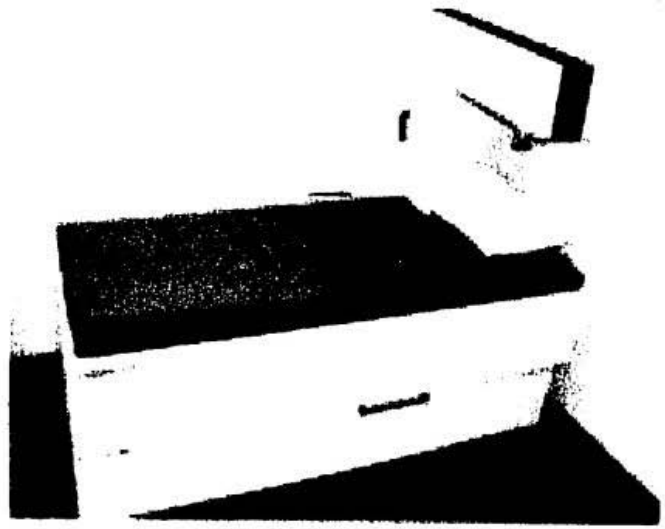
- Gender
- Age
- Race
- Hormone Levels
- Low Body Weight
- Low calcium intake
- Family history
- Inactivity
- Smoking and alcohol
- Excessive sodium & protein intake
- Medications

Signs and Symptoms

- Fractures
- Change in body shape
- Pain

Diagnosis

- **Bone Densitometry**



Who should be tested?

Those people:

- considering ERT
- taking steroid meds or anti-seizure meds
- with spinal deformities or fractures
- with osteoporosis for reassessment
- with overactive parathyroid gland
- undergoing chemotherapy
- with amenorrhea
- men with low testosterone

Prevention

- Adequate calcium intake
- Exercise
- Estrogen replacement following menopause

Treatment

- ERT
- Calcium
- Vitamin D
- Biphosphonates
- Calcitonin
- Fluoride

Pain Control

- Heat & ice
- TENS
- Rest & sleep
- Braces & supports
- Medications
- Acupuncture
- Social support

SUGGESTED ACTIVITIES

Osteoporosis Self Assessment

Please answer the following questions:

	Yes	No
I am a Caucasian female	___	___
I am underweight	___	___
I take steroid medication	___	___
I am menopausal	___	___
I have a family history of osteoporosis	___	___
I am physically inactive	___	___
I take anti-convulsive medication	___	___
My diet is low in calcium	___	___
I smoke	___	___
I drink more than 1-2 alcoholic drinks per day	___	___
My diet is very high in salt and protein	___	___

NOTE: Your risk of osteoporosis increases with the number of "yes" responses. According to the Osteoporosis Society of Canada, if you answer yes to four or more of these questions you should consult your physician.

REFERENCES AND RESOURCES

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Notable Web Sites on Osteoporosis

www.pslgroup.com

This site provides up-to-date information for people with osteoporosis and/or those interested in the subject.

www.nof.org

This site is presented by the National Osteoporosis Foundation. It provides information on all aspects of the disease.

www.sonnet.com

This site is presented by the Osteoporosis Center. It provides education and information on the topic of osteoporosis.

Pamphlets and other resources may be ordered through:

Osteoporosis Society of Canada
33 Laird drive,
Toronto, Ontario, Canada
M4G 3S9
Phone: 1-800-463-6842

Dairy Farmers of Canada
1330-1981 McGill Ave.
Montreal, Quebec
H3A 2X9
Phone: 1-800-361-4632

Local Community Health Resource Center

Recommended Video:

The Silent Thief:

30 minutes - focuses on what it means to have osteoporosis.

Available through:

Osteoporosis Society of Canada
33 Laird drive,
Toronto, Ontario, Canada
M4G 3S9
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Osteoporosis: The Silent Thief

What is osteoporosis?

Osteoporosis is a common metabolic bone disorder in which bone mass decreases to a level where bones may fracture with minimal trauma. In some cases, even something as simple as a cough or sneeze can result in major injury. It is referred to as the "silent thief" because signs and symptoms are so gradual that the disease is often not evident until bone mass is so low that bones fracture.

It affects over 20 million North Americans resulting in over 1.5 million fractures a year while costing an average of $10 billion in medical and rehabilitation costs. The cost of human suffering however is even greater. Of those who suffer hip fractures 35% never walk independently again while 25% have to be admitted to nursing homes on a permanent basis. Within a six month period, the death rate in people who have suffered hip fractures can be as high as 20% in people 80 and over.

What are the risk factors?

The great shame in these statistics is that this disease can be prevented. It is not simply an inevitable result of aging. There are a number of factors however, which contribute to osteoporosis which can be controlled if given the proper attention. These include such things as gender (women are 4 times more likely to develop osteoporosis), menopause (reduction in estrogen), low calcium intake, lack of weight bearing exercise, low body weight, family history, smoking and alcohol, and certain medications (steroids and anti-seizure drugs).

How osteoporosis be prevented and treated?

Osteoporosis can be prevented if we address the factors which contribute to the disease long before fractures occur. Women who are going through menopause should discuss estrogen replacing therapy with their doctors. This therapy replaces the estrogen which the body is no longer producing, which once provided the bones with protection against cells which break them down. Regular weight bearing exercise is important because this builds bone mass. This includes such activities as walking, jogging, and tennis. Also, a diet rich in calcium is very important. Most women are not consuming an adequate amount of calcium. (For ex: according to Cassel et al (1996) 75% of U.S. women are consuming less than the daily recommended in take of calcium). The recommended daily intake of calcium is 800mg daily for pre-menopausal women,

1200mg for men, and 1500-2000mg daily for teens and post-menopausal women.

Treatment for osteoporosis includes such measures as calcium and vitamin D supplementation, because these serve to increase or maintain bone mass. There are also medications such as calcitonin ; a hormone which functions to increase calcium absorption into the bone and biphosphonates, which bind to the surface of bone and inhibit bone breakdown (this drug is new and not commonly used yet in Canada).

People need to recognize that we are responsible for many of our health outcomes. Now is the time to look to the future and consider how we can make our lives better as we age. Osteoporosis is a devastating disease which could be greatly diminished if we take the time reduce our risk factors. Taking care of our bodies now means a healthier happier tomorrow!

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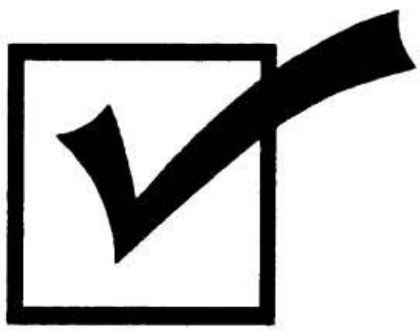
Learner Evaluation Form



Learner Evaluation Form

On a scale of 1 (not at all) to 5 (very much), please rate the osteoporosis session you have just participated in:

Did you find the session informative?	1	2	3	4	5
Was it easy to understand?	1	2	3	4	5
Was it interesting?	1	2	3	4	5
Was the presenter open to questions and discussion?	1	2	3	4	5
Did you find the session useful?	1	2	3	4	5

What did you like most about the session?

_____

_____

What did you like least about the session?

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Any suggestions for improvement?

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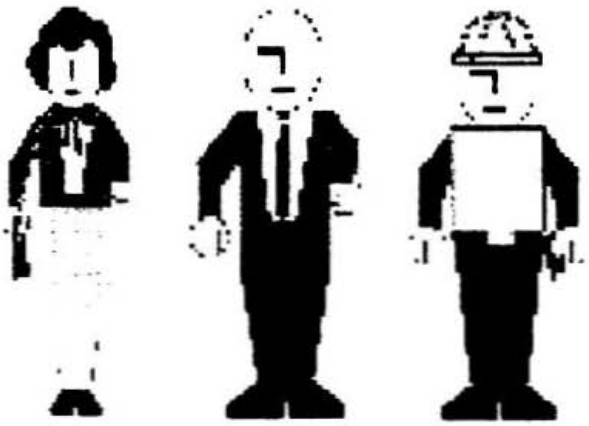
Thank you for your participation!

Ergonomics:



A Sensible Approach to Workplace Safety!

A lunch-n-learn program guide.

By: Pamela R. Ward

Table of Contents

Purpose of this module:

This module has been developed in response to a need for well organized, interesting and efficient learning material on the topic of ergonomics. It is intended to provide nurses facilitating lunch and learn sessions, with accurate, up-to-date information and supporting resources, which can be effectively presented with limited time preparation.

Structure and use of this module:

The nurse/facilitator is provided with learner objectives, along with all information and resources (including handouts and overheads) required to aid the learner in achieving these objectives. Other resources are referenced and may be used to support or enhance the material provided. Also, suggested learner activities are provided, which support the material and encourage participation on the part of the learner. The facilitator is notified by the following icons when to display overheads, when to carry out activities, and when to take special note of certain information:

 - display overhead

 - take special note

 -suggested activity

The content presented in this module is divided into distinct sections which serve to answer 5 main questions: 1) What is Ergonomics? 2) What are the most common injuries addressed by ergonomics and how are they treated? 3) What are the main principles of ergonomics and how can these principles be used to reduce and prevent such work related injuries? 4)What are some of the barriers to the implementation of ergonomically designed workstations? and 5) What are the characteristics of an ergonomically designed office workstation? A presentation of objectives associated with these questions encourages the learner to contemplate the topic before relevant information is provided.

This module is intended to be utilized in a typical 1-2 hour lunch and learn session. As noted on the title page it is to be used as a guide to an interactive learning session. It is not intended to be presented in lecture format. The learner should be encouraged to share his or her views with regards to the given topic while becoming involved in the suggested activities. The facilitator is encouraged to use the module to initiate and promote discussion and interaction.

Considering this module covers sessions ranging from 1-2 hours in duration, some material is considered optional. This material is clearly marked. It is the responsibility of the facilitator to determine whether optional material should be included, with consideration to time and the particular learning group. In a one hour

session for example, much of the optional material may be omitted.

Learner Objectives

Following this learning session on the topic of ergonomics, the learner will:

1) be able to describe the concept of ergonomics.

2) have acquired a knowledge of which workplace injuries are commonly addressed by ergonomics and how they are treated.

3) be aware of the signs and symptoms of such injuries.

4) display an understanding of the the main principles of ergonomics and how these principles can be used to reduce and prevent work site injuries.

5) be knowledgeable with regards to the barriers often encountered in attempting to implement ergonomically designed workstations.

6) have acquired an understanding of the characteristics of an ergonomically designed workstation in the office setting.

Note: Objectives may be presented to the learner as handouts or overhead. An overhead is provided.

OVERHEAD# 1 

Cover: Ergonomics (this overhead is intended to be used while introducing oneself and the topic at hand. It should be placed on the projector before you begin this session).

OVERHEAD # 2 

Learner objectives(the objectives should be presented to the learner before the session begins).

OVERHEAD #3 

What is Ergonomics ?

The term ***ergonomics*** is derived from the greek words "ergon" meaning work and effort, and nomos, meaning law or surroundings. Simply stated, it is a system in which the work or job station is designed to properly fit the worker, instead of the worker having to try and fit the work station. It is based on the fact that people

working in given work areas are usually of different sizes, shapes, ages, and physical conditions. It also recognizes that people differ in terms of their awareness and use of good posture and body mechanics or movement.

Ergonomics or human factors, as it is often called, considers that there are certain environmental and physical stressors within the workplace and strives to address and reduce or eliminate such stressors. The worker may be affected by one or any number of stressors. These stressors are often viewed as risk factors. The more exposure the worker has to such stressors, the greater the likelihood that injury may occur.

OVERHEAD #4 

Such stressors include:

1) Repetitive motions: (ex: typing, scanning). When motions are repeated on a regular basis, blood vessels become narrowed, resulting in decreased blood flow to the muscle. The muscle in this case cannot work to its full capacity and the person therefore uses more muscular effort. This means the muscles and the supporting structures (joints, ligaments, and tendons) become more stressed and have less time to recover. The greater the degree of repetition,

the greater the likelihood that injury will occur.

2) Awkward motions: (eg: leaning, stretching or twisting to reach objects, or such movements as holding a telephone between the head and shoulder). These motions occur when one goes beyond the neutral position, so the person's posture deviates forward, backward, or from side to side. Jobs or work areas which cause one to remain in an awkward position for long periods of time lead to what is referred to as constrained body positions, ultimately leading to injury.

3) Excessive force: This involves such movements as lifting heavy loads or pushing and pulling of heavy objects. This can lead to strain and injury to the muscles and tissues of the body. Also, leaning parts of the body on hard surfaces for leverage can place undue strain on these body parts.

4) Vibration: (eg: use of jack hammers, heavy equipment, high frequency tools). As with many other stressors placed on the body, vibration results in a narrowing of the blood vessels which thus reduces blood flow to the given body part. This reduction in blood flow combined with the forceful motion

produced in such cases, can result in strain and injury to the given area. When using mechanical equipment which vibrates, the greatest reduction in blood flow results in the hands and the fingers. This leads to a "toxic vibration reflex" in which the individual grips the equipment with a greater force than he or she realizes. This in turn places more stress on other muscles and tissues in the body.

OVERHEAD #5 

What are The Most Common Types of Injuries Addressed by Ergonomics?

There are a number of injuries which may be addressed by ergonomics. The most common fall under two categories. These include cumulative trauma injuries and back injuries.

1) Cumulative trauma injuries (CTI's) :

These types of injuries are also referred to as overuse disorders or repetitive motion injuries. These result when soft tissues in the body such as tendons, muscles, and nerves undergo repeated strain or tension. This excessive use results in

narrowing of blood vessels and a decrease in the natural lubricant for tendons called synovial fluid which allows them to glide easily. This in turn leads to inflamation, pain, and tenderness. The tubes or canals which cover or encase the nerves also become inflamed and begin to press on the nerves causing pain, weakness, and numbness in the affected body part. Some of the more common injuries within this category include:

- ***Carpal tunnel syndrome:*** This results when a nerve in the wrist is compressed, either from the swelling of this tendon and tunnel which encloses the nerve or from repeated awkward bending of the wrist.

- ***Epicondilytis (tennis elbow):*** This results from excessive reaching or leaning on the elbows, and swinging of the forearm.

- ***DeQuervain Syndrome (hammer thumb):*** This results when the tendon of the thumb becomes inflamed from excessive hammering, sanding or forceful gripping of certain tools.

NOTE: Cumulative trauma injuries can affect any number of body parts. However the arms, hands, neck, and shoulder are most commonly affected.

2) Back injuries:

Back pain and discomfort are major complaints within the workplace and is the leading cause of visits by adults to their doctors. The majority of this pain and discomfort is the result of injury to back muscles and soft tissues in the back. Excess weight or force on the back muscles results in a narrowing of the blood vessels and decreased circulation to these muscles. These muscles fatigue easily due to decreased oxygen flow, and if not given the proper time to rest are easily injured.

This excess force may result from lifting, pushing, or pulling heavy loads or using mechanical equipment which vibrates, resulting in whole body vibration (use of heavy equipment such as tractors). Unlike cumulative trauma injuries, back injuries can occur at any time, even the first time one performs a task (although the individual's chance of back injury increases with regular and repeated stress to the back muscles and supporting structures).

Back injuries can range from mild strains, in which muscles become inflamed and tender, to structural damage to the spine in which vertebrae become fractured or break, or intervertebral discs become herniated (slip out of place between the vertebrae). These injuries can be chronically painful and debilitating and take long periods of time to treat and may never heal completely.

OVERHEAD #6 

What are The Signs and Symptoms of Cumulative Trauma Injuries?

Cumulative trauma injuries generally occur in **3** stages. These include:

1) Stage 1: Initially symptoms include aches and tiredness during the working hours. This settles overnight and on the individual's days off. During this stage there is no reduction in or impairment of work performance. These symptoms may persist for weeks or months and are reversible in nature.

2) Stage 2: If the stress and strain is ongoing, tenderness and weakness often are combined with numbness, pain, and swelling. These symptoms begin early in the work shift and do not tend to settle much overnight. Sleep patterns often become disturbed, thus reducing the individuals capacity to perform repetitive tasks.

3)Stage 3: Symptoms in this stage persist even with rest and during the night. Pain and tenderness are often present even with non-repetitive motions. This disturbs sleep patterns and other activities. The individuals capacity to carry

out work role is greatly compromised.

OVERHEAD # 7 

What are The Signs and Symptoms of Back Injuries?

Back injuries, unlike CTI's do not follow a predictable course in terms of the progression of signs and symptoms. These signs and symptoms vary according to the type of injury (i.e. muscular or skeletal) and the degree of damage done. A person with a herniated or slipped disc for example, may not experience as much pain as a person with a sprained back muscle, especially if the disc is not leaning on a nerve.

Usually, most back injuries are accompanied by back pain. This pain may be chronic dull or aching pain, sharp acute searing pain, or temporary spasmodic pain. It may be present at rest or just upon exertion. This pain may affect one's sleep patterns and interrupt his or her ability to work effectively. If it persists it may interfere with other activities even to the point of debilitation. In each instance, one should be aware that back pain is a serious matter which requires medical consultation.

OVERHEAD # 8, 9, 10, &11 

What Are the Principles of Ergonomics and How Can They Be Used to Reduce Work Site Injuries?

Ergonomics or Human Factors Design as it is often called, is based on a number of underlying principles. These principles, if applied to work site design and the employees work habits, can serve to drastically reduce work related injuries. These include:

1) Work in proper positions and postures:

This allows one to maintain a neutral position in which the spine keeps its natural S shape. When maintaining this neutral position there is less stress placed on the structures which support and are supported by the spine (i.e. muscles, ligaments, tendons, nerves).The individual can undertake tasks with greater ease and productivity while maintaining a natural posture.

2) Change postures:

Although a neutral posture is important, it should not be held static for too long. This places stress on muscles and supporting structures which serve to maintain such a posture. Changing position every 15 minutes or so allows

these structures to rest. This changing of position may include, sitting, standing, stretching, or repositioning a seat to a higher or lower level or readjusting a VDT (video display terminal or monitor) to rest one's eyes and neck muscles.

3) Work with equipment and controls at appropriate heights:

This is vital for both manual work and work with video display terminals such as computer monitors. The placing of controls too high or too low results in poor posture which places strain on eye, neck and back muscles. VDT's should be placed at a downward angle of 15° or 1 inch down for every 4 inches away. Manual controls and tasks should be appropriately placed at elbow height. Light work should be above elbow height, while heavy work should be below elbow height.

4) Limit or reduce tasks requiring repetition:

As previously discussed, tasks performed repetitively result in narrowing of blood vessels to muscles. Without adequate rest between tasks these muscles tire easily. This places further stress on supporting structures leading to possible injury.

5) <u>Limit the use of excess lifting or force:</u>

Heavy objects exert more force on the body than light objects, especially when proper techniques and lifting devices are not used. This force may result from lifting, pushing, pulling, bending, or twisting, or a combination of any of these. For example, if one lifts an object while twisting at the same time, even greater force is exerted on the muscles of the involved body parts. Muscles, when exerted to their limit, become fatigued and more prone to injury.

All efforts should be made to reduce the size and weight of a given load and the force it exerts on the body. For example:

- Stretch prior to handling any load.
- Push instead of pull.
- Use mechanical lifts and transporting devices whenever possible.
- Keep loads close to the body.
- Bend knees and use legs to support the weight of the object *(do not bend at the waist!)*.
- Limit the size of the object or container if possible.
- Use gloves which fit properly and have good grips.

It is important that one move heavy loads with consideration to one's center

of gravity or the point of balance between the upper and lower portions of the body. When lifting, the object should remain close to the person's center of gravity, while the person bends his or her leg muscles to bear the weight. The back remain straight. If one bends over the object, the center of gravity moves forward and the back muscles are forced to do the work. It should be kept in mind that the base of support is also important when lifting. This base is considered stable when the feet are kept shoulder distance apart.

6) Avoid poor posture, repetitious work or use of excessive force for long durations:

Any of these elements place stress on the body even when performed over short periods of time. When they are performed over longer periods however, the likelihood of injury increases dramatically. The body becomes greatly fatigued. These body structures which are used to perform such tasks, require rest in order to perform tasks effectively without exhaustion or injury. If it is essential that such tasks be carried out, then they should be limited to shorter intervals, alternating with rest periods or different non-repetitive or non-weight bearing tasks. For example, a cashier who scans items on a continual basis during a shift should be allowed regular rest periods and be provided

with periods of work on other tasks throughout the store. This allows the arm and supporting structures to rest and fatigued muscles to recuperate. For individuals handling loads, he or she again should be provided with rest periods, mechanical devices should be used when possible to give the individual time to rest fatigued muscles, and other non-weight bearing tasks should be performed (if possible) to alternate with weight bearing tasks.

7) <u>Avoid excessive reaching:</u>

A person's reach consists of the area in which one can move one's arm around in space without having to stretch or overextend muscles. Unfortunately, when most people reach, they overextend the arm, neck and back muscles, often bending of twisting awkwardly at the same time. This places great stress on the given muscles which causes them to become quickly fatigued.

When considering a work space, it is vital to recognize that everyone's reach varies to some degree depending on height, arm length and flexibility. For this reason:

-Tools and work items should be placed well within reach, in a designated area according to importance and frequency of use

(eg: more frequently used items should be placed closer than those used infrequently).

- Overhead storage should be limited (below the shoulder and above the knee storage limits the degree of reaching and bending).

- Chairs on wheels should be used, since they rotate and allow the person to bring the whole body closer to the object to limit stretching.

- Telephone headsets can be implemented to ensure that a worker doesn't reach repeatedly for the telephone.

- The use of turntables allows for easy access to files and other information.

8) <u>Avoid tools or equipment which exert excess pressure on the tissues of the body:</u>

Tools which exert pressure on body tissues can cause narrowing of blood vessels which results in fatigue while also doing structural damage to fragile tissues. (i.e. bruising, callusing, scarring). This pressure can be avoided or reduced by ensuring that tools:

- are power instead of manual, so less force is required on the part of the worker.

- have rounded and padded grips.

- are limited in terms of the number and degree of sharp edges.

Work surfaces should be rounded on the edges and provide support for arms and wrists. Also, gloves (which fit properly) should be worn to limit pressure on protruding parts.

9) <u>Limit exposure of working body parts to cold air:</u>

Working body parts may be somewhat restricted with regards to blood flow. If these body parts are exposed to cold air, blood flow may be reduced even further. This reduction in blood flow may make the given body part more susceptible to injury.

Exposure to cold air may come from exposure to the outside elements or may be related to work site tools such as those with compressed air. Also, those people who work with freezers and other cooling equipment may be affected. These workers should always protect the hands and exposed body parts. Periodic breaks are also essential. These steps will help to maintain adequate blood supply and hopefully reduce the chance of injury.

☞This section re: treatment of CMI's & back injuries is optional.☜

How are cumulative trauma injuries and back injuries treated?

OVERHEAD #12 

Cumulative Trauma Injuries:

Stage 1:

Because cumulative trauma injuries are progressive in nature there are great benefits to the worker and the employer if they are treated early, in stage 1 when the symptoms are reversible. Usually this can be done with limited or no loss of work time on the part of the worker. Treatment at this stage may include regular scheduled rest breaks combined with some degree of work modification. This modification may include rotation of tasks, in which the worker may alternate non-repetitive tasks and repetitive tasks. The worker may also be given the option to avoid repetitive tasks for a given period of time, considering the type of work done and the flexibility of the employer.

The worker may also be prescribed certain exercises which are designed to strengthen weakened muscles in the body parts most susceptible to injury.

Stages 2 & 3:

Once the worker's injury has reached the second or third stage, it has much greater implications for both the worker and the employer. The worker, at this stage, must abstain from performing repetitive motions which have contributed to the injury. In some jobs, this may mean extended periods of time off work. Affected body parts require time to rest. This rest may be combined with drug therapy as prescribed by one's physician such as painkillers, muscle relaxants, anti-inflammatories, physiotherapy, acupuncture, or even surgery.

OVERHEAD #13 

Back Injuries:

The treatment for back injuries varies according to the severity and type of injury (muscle or spine involvement). Treatments range from rest and prescribed exercises for mild strains, to physiotherapy, drug therapy, acupuncture and surgery for more severe back injuries. As with CTI's, some back injuries may allow the person to continue working with modifications, while others may cause prolonged periods off work and chronic disability.

OVERHEAD #14 

What are Some of The Barriers to Ergonomically Designed Work Stations?

1) Lack of knowledge regarding ergonomics: Both employees and employers may be unaware of the advantages of applying the principles of ergonomics within the workplace.

2) Assumption of ergonomically correct work situations: Many employers and employees assume that a given tool or workstation is ergonomically correct because they meet industry standards. Unfortunately, industry standards do not always provide optimal protection for employees with regard to work safety. Many standardized tools and work stations, although meeting industry standards are not ergonomically correct.

3) Lack of funds or refusal to purchase ergonomically designed equipment or ergonomic consultation: Many areas of employment are simply lacking the funds to purchase and implement ergonomically designed tools and workstations. In this situation employers could consult with ergonomics specialist for advise on maximizing safety with existing equipment. This may simply be a means of

modifying or adjusting the organization of a given work station. Many employers however, also lack funding for such consultation.

4) Resistance to change on the part of workers: Many workers feel they have been doing their job correctly for many years and feel insulted when it is suggested they may carry out their work in a more appropriate manner.

5) Resistance to change on the part of the employer: Employers are often threaten by the suggestion of timed breaks and rotation of tasks because they fear productivity may decrease.

OVERHEAD #15 

What are The Characteristics of an Ergonomically Designed Office Work Station?

NOTE: Considering that the given type of work of the learner may vary to a great extent, this module will focus on the design of an average office work station which is the most commonly seen. The facilitator may feel free to research a given type of work station which most appropriately fits the learning group prior to a session and apply the principles of ergonomics to that given station as it would be impossible to include all types of work stations in this module.

1) Efficient seating:

Seating should promote good posture. The lumbar portion or curve of the back should be supported so that the person's back is in contact with the seat at all times. The seat should be slightly reclined and should have wheels and a swivel base to provide easy access to objects within the work station. Arm rests should be parallel to the floor to support the arms while typing or keyboarding. These armrests should also be cushioned to decrease pressure to the soft tissues of the arm. The height of the seat should also be adjustable to ensure proper distancing from work area for people of different heights.

2) Video display terminals (monitors) and keyboards should be placed at proper heights:

VDT's (video display terminals) should be placed slightly lower than eye level to reduce neck and eye strain. Most literature suggests the monitor or terminal be placed 15° lower than eye level or 1 inch down for every 4 inches away.

The keyboard should be placed just below elbow level close to and at the height of the abdomen or belly while the wrists are supported by a wrist pad. This ensures the forearm and wrist remain in a relatively neutral position.

3) Adequate distance of worker to work station:

It is suggested that video display terminals be placed 18-22 inches from the eyes. The computer station should be placed within reach of the work station with telephone, calender, files, supplies, and writing space. These items may either be placed within reach around the computer or as a separate station at a right angle to the computer station. This ensures adequate reach to all aspects of the workstation so twisting, stretching, and awkward motions can be avoided.

4) Good lighting:

Light within the work area should be evenly dispersed and not placed directly over the computer. Natural lighting is good and should be at a right angle to the computer to ensure the worker is not encountering light reflecting off the computer screen or shining directly into his or her eyes. Glare on the screen or display terminal should be avoided. Proper task lighting which is not directed at the screen can be used.

5) Proper positioning of computer mouse:

The computer mouse should be placed next to the keyboard at the same level (not above or below). This helps to avoid over extension of the arm and awkward

motions of the wrist. It is also desirable to have a wrist support behind the mouse pad so the wrist may be maintained in a neutral position.

6) <u>A proper foot rest:</u>

A proper foot rest helps to maintain the spine in a neutral position, thus reducing strain on the back muscles. This foot rest should be slightly angled toward the worker, so the feet rest comfortably.

<u>Suggested activity</u>: Have the learners gather around a vacant office workstation. They should be instructed to assess the workstation arrangement and point out positive and negative points aspects with regard to ergonomic design. Then provide them with your assessment and ways to improve the workstation. This activity should take at least 15 minutes.

Remember!

The work station or work area should be designed with the worker in mind. One should attempt to modify this arrangement to fit his or her needs, instead of trying to modify one's own posture to fit the work station. Even when this is difficult there are always steps which may be taken to decrease the chance of injury and disability.

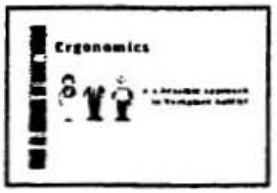
" Let the operator perform natural activities, i.e. those for which the human body is suited"(Kroemer et al, 1997, p. 421).

Appendix A

OVERHEADS

Outline of Overheads

Overhead# 1



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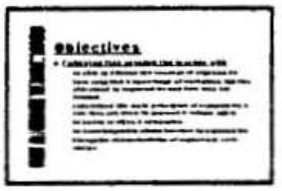

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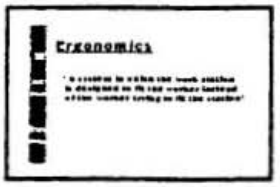

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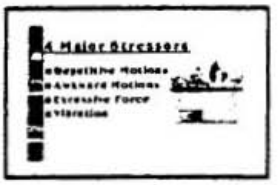

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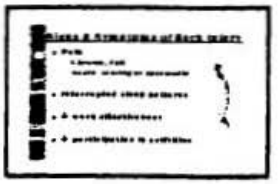

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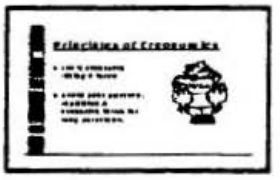
Overhead#9

Overhead# 10



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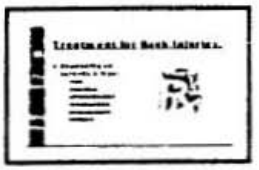
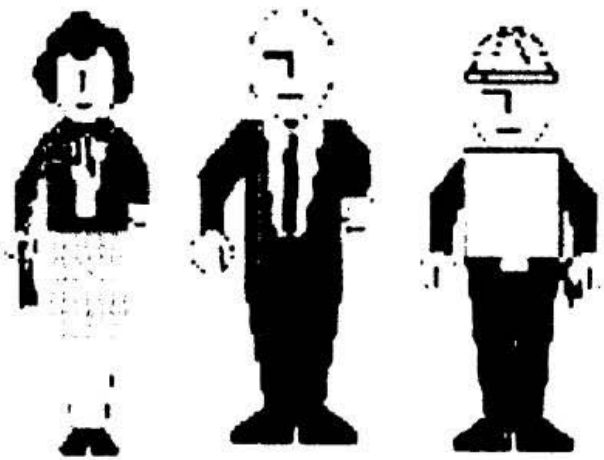
Overhead# 13



Overhead # 14

Overhead # 15

Ergonomics



- **A Sensible Approach to Workplace Safety!**

Objectives

- **Following this session the learner will:**
  - be able to discuss the concept of ergonomics.
  - have acquired a knowledge of workplace injuries addressed by ergonomics and how they are treated.
  - understand the main principles of ergonomics & how they are used to prevent & reduce injury.
  - be aware of signs & symptoms of common injuries.
  - be knowledgeable about barriers to ergonomics.
  - recognize characteristics of ergonomic work station.

Ergonomics

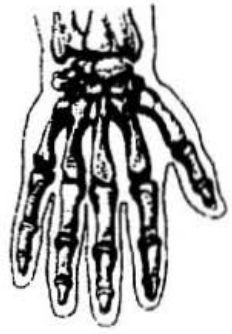
" a system in which the work station is designed to fit the worker instead of the worker trying to fit the station".

4 Major Stressors

- Repetitive Motions
- Awkward Motions
- Excessive Force
- Vibration

Most Common Injuries

- **Cumulative Trauma Injuries (repetitive motion injuries).**



- **Back Injuries.**

Signs & Symptoms of CTI'S

- **Stage 1- aches & tiredness at work**
  - **no work impairment.**
- **Stage 2- tenderness, weakness, pain,**
  - **numbness, swelling**
  - **work impairment**
- **Stage 3- symptoms worsen**
  - **unable to work**
  - **requires ongoing treatment**

Signs & Symptoms of Back Injury

- **Pain**
  - Chronic, dull
  - Acute, searing or spasmodic
- **Interrupted sleep patterns**
- **↓ work effectiveness**
- **↓ participation in activities**

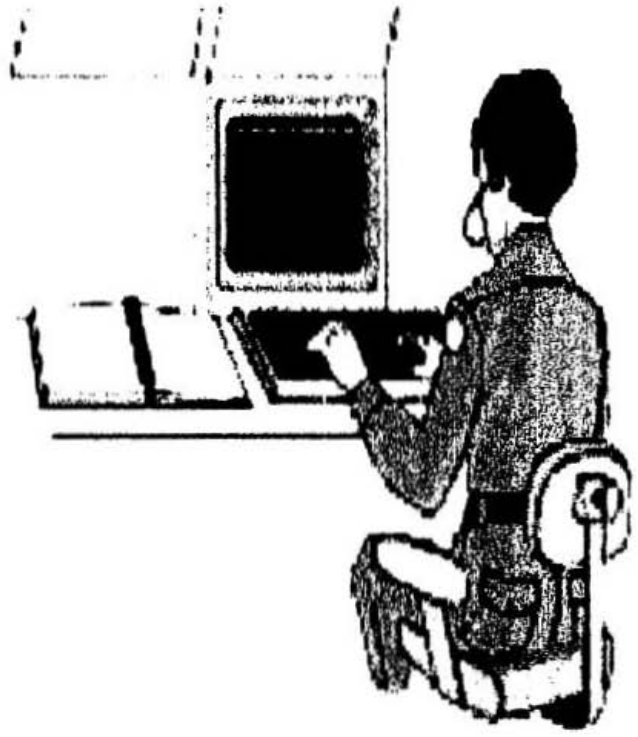
Principles of Ergonomics

- **Work in proper posture and position.**

- **Change posture.**

Principles of Ergonomics

- Equipment at proper heights.
- Limit repetitious tasks.



Principles of Ergonomics

- **Limit excessive lifting & force.**
- **Avoid poor posture, repitition,& excessive force for long durations.**

Principles of Ergonomics

- Avoid excessive reaching.
- Avoid pressure on soft tissues.
- Avoid exposure to cold.

Treatment of CTI'S

- **Stage 1-**
  - **rest breaks & work modification.**
- **Stage 2& 3-**
  - **no repetitive motions.**
  - **rest.**
  - **medications, physiotherapy, acupuncture, surgery.**

Treatment for Back Injuries.

- **Depending on severity & type:**
  - **rest**
  - **exercise**
  - **physiotherapy**
  - **medications**
  - **acupuncture**
  - **surgery**

Barriers to Ergonomic Design

- Lack of knowledge.
- Assumption of good industry standards.
- Lack of funds.
- Resistance to change-
  - workers
  - employers.

Characteristics of Ergonomic Work Station.

- Efficient seating.
- VDT's at proper height.
- Adequate distance to work station.
- Good lighting.
- Proper position of mouse.
- Footrest.

Appendix B

REFERENCES AND RESOURCES

References

Bridger, R. S. (1995). Introduction to ergonomics. Toronto: Mcgraw-Hill.

Kroemer, H. E., Kroemer, H. J., & Kroemer-Elbert, K.E. (1997). Engineering physiology: Basis of human factor design/ergonomics. Toronto: Van Nostrand Reinhold.

Macleod, D. (1995). The ergonomics edge: Improving safety, quality and productivity. Toronto: Van Nostrand Reinhold.

Office ergonomics safety guide. (1996). Hamilton: Canadian Centre for Occupational Health and Safety.

Pheasant, S. (1996). Bodyspace: Anthropometry, ergonomics, and the design of work. London: Taylor & Francis.

Salvendy, G. (1997). Handbook of human factors and ergonomics. Toronto: Wiley.

Notable Web Sites on Ergonomics

www.ergoweb.com

This site provides up-to-date information on ergonomics, as well as suggested software and resources.

www.ahs.uwaterloo.ca/kin/ergo/

This site is a great resource for ergonomics information which is broken down into categories. It also provides a number of related sites on the subject.

www.dir.yahoo.com/Science/Engineering/Ergonomics

This site is a search engine which provides direct searches for ergonomics and related subjects.

Pamphlets and other resources may be ordered through:

Provincial Department of Environment & Labour
Occupational Health and Safety
Workplace Health & Safety Strategy Division

Industrial Accident Prevention Association
Health and Safety Materials Centre
1060 Matheson Boulevard East
Mississauga, ON
L4W 3B3
(905) 602-4522

Local Community Health Resource Centre

Recommended Videos:

Ergonomics and Your Health-

13 minutes- teaches employees how to set up their office with consideration to ergonomics and reduction and prevention of injury.

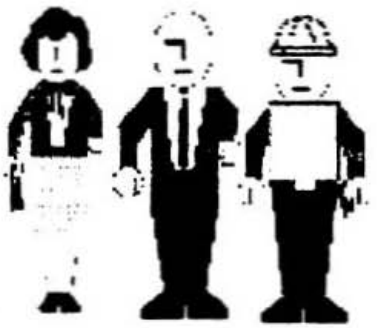
Ergonomics: Work Smarter, Not Just Harder-

20 minutes- discusses various types of workplace injuries and how they can be prevented.

Available through:

Provincial Department of Environment & Labour
Occupational Health and Safety
Workplace Health & Safety Strategy Division

Ergonomics:
A Sensible Approach to Workplace Safety!



What is Ergonomics ?

The term ***ergonomics*** is derived from the greek words "ergon" meaning work and effort, and nomos, meaning law or surroundings. Simply stated, it is a system in which the work or job station is designed to properly fit the worker, instead of the worker having to try and fit the work station. It is based on the fact that people working in given work areas are usually of different sizes, shapes, ages, and physical conditions. It also recognizes that people differ in terms of their awareness and use of good posture and body mechanics or movement.

Ergonomics or human factors, as it is often called, considers that there are certain environmental and physical stressors within the workplace and strives to address and reduce or eliminate such stressors. The worker may be affected by one or any number of stressors. These stressors are often viewed as risk factors. The more exposure the worker has to such stressors, the greater the likelihood that injury may occur. Such stressors include: 1) repetitive motions, 2) awkward motions, 3) excessive force and 4) vibration.

What are The Most Common Types of Injuries Addressed by Ergonomics?

Although ergonomics addresses a number of injuries, most of these injuries tend to fall under two categories. These include cumulative trauma injuries, and back injuries. Cumulative trauma injuries are also referred to as overuse disorders or repetitive motion injuries. These result when soft tissues in the body such as tendons, muscles, and nerves undergo repeated strain or tension. This excessive use results in narrowing of blood vessels and a decrease in the natural lubricant for tendons called synovial fluid which allows them to glide easily. This in turn leads to inflamation, pain, and tenderness. The tubes or canals which cover or encase the nerves also become inflamed and begin to press on the nerves causing pain, weakness, and numbness in the affected body part.

Back pain and discomfort is a major complaint within the workplace and is the leading cause of visits by adults to their doctors. The majority of this pain and

discomfort is the result of injury to back muscles and soft tissues in the back. Excess weight or force on the back muscles results in a narrowing of the blood vessels and decreased circulation to these muscles. These muscles thus fatigued easily due to decreased oxygen flow and if not given the proper time to rest are easily injured.

This excess force may result from lifting, pushing, or pulling heavy loads or using mechanical equipment which vibrates, resulting in whole body vibration (use of heavy equipment such as tractors). Unlike cumulative trauma injuries, back injuries can occur at any time, even the first time one performs a task (although the individual's chance of back injury increases with regular and repeated stress to the back muscles and supporting structures).

Back injuries can range from mild strains, in which muscles become inflamed and tender, to structural damage to the spine in which vertebrae become fractured or break, or intervertebral discs become herniated (slip out of place between the vertebrae). These injuries can be chronically painful and debilitating and take long periods of time to treat and may never heal completely.

What Are The Principles of Ergonomics?

Ergonomics or Human Factors Design as it is often called, is based on a number of underlying principles. These principles, if applied to work site design and the employees work habits, can serve to drastically reduce work related injuries. These include:

1) working in proper postures and positions (maintain s shape of spine).
2) changing position frequently (at least every 15 minutes).
3) working with equipment at proper heights (light work above elbow height, heavy work below elbow height, computer monitors at a 15% downward angle).
4) limit or reduce tasks requiring repetition.
5) reduce excessive lifting.
6) Avoid poor posture, repetitious work or use of excessive force for long durations.
7) Avoid excessive reaching.
8) Avoid tools or equipment which exert excess pressure on the tissues of the body.
9) Limit exposure of working body parts to cold air.

References

Bridger, R. S. (1995). Introduction to ergonomics. Toronto: Mcgraw-Hill.

Kroemer, H.E.,Kroemer, H. J., & Kroemer-Elbert, K.E. (1997). Engineering physiology: Basis of human factor design/ergonomics. Toronto: Van Nostrand Reinhold.

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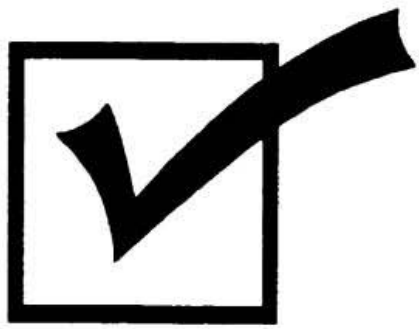
Learner Evaluation Form



Learner Evaluation Form

On a scale of 1 (not at all) to 5 (very much), please rate the ergonomics session you have just participated in:

Did you find the session informative?	1	2	3	4	5
Was it easy to understand?	1	2	3	4	5
Was it interesting?	1	2	3	4	5
Was the presenter open to questions and discussion?	1	2	3	4	5
Did you find the session useful?	1	2	3	4	5

What did you like most about the session?

_____

_____

What did you like least about the session?

_____

_____

Any suggestions for improvement?

_____

_____

Thank you for your participation!