

Nutrition and Exercise History

Week 8 October 21st, 2016

REMINDERS FOR THIS SESSION

- Review the Nutrition and Exercise material before attending the session

OBJECTIVES

By the end of this session, you should be able to:

- Identify the clinical significance of healthy eating and exercise
- Identify challenges to healthy eating and exercise for medical students and physicians
- Be familiar with advantages and disadvantages of popular diets
- Use appropriate dietary assessment tools through role-playing activities
- Explain the benefits of exercise and its role in disease prevention
- Be familiar with the Canadian physical activity guidelines
- Assess patients using PAVS (Physical Activity Vital Sign)

AGENDA

8:00-8:30	General questions and take up worksheet on the clinical significance of nutrition and exercise (Worksheet A)
8:30-9:00	Open discussion within group about physician attitudes, medical student wellness and personal challenges
9:00-9:30	<u>Exploring popular diets</u> : Take up Worksheet B
9:30-9:45	Break
9:45-10:30	Practice using tools for assessing nutrition and exercise in pairs
10:30-10:45	Role-play Scenario 1 (in pairs)
10:45-11:00	Debrief Role-Play 1
11:00-11:15	Role-Play Scenario 2 (in pairs)
11:15-11:30	Debrief Role-Play 2
11:30-11:45	Role-Play Scenario 3 (in pairs)
11:45-12:00	Debrief Role-Play 3

HOMEWORK

Students are expected to have reviewed the content for this session prior to the session.

Students must have Worksheet A & B completed prior to the session.

The goal of the session is for students to practice their history taking skills on each other.

CLINICAL SIGNIFICANCE WORKSHEET OF NUTRITION AND EXERCISE EDUCATION (Worksheet A)

Please answer the following questions prior to the scheduled session and bring the worksheet to class.

1. Why is nutrition such an important part of a healthy lifestyle and how can physicians be better prepared to provide nutritional guidance to patients?
2. What resources can a physician provide to patients who are making lifestyle changes such as diet changes? (Example: pamphlets) How effective are these compared to counseling?

3. Why do physicians feel ill prepared to counsel patients on nutrition and exercise? Provide at least 2 reasons.
4. Do you think a physician's attitude towards nutrition and exercise will influence their counseling behaviour? Provide some examples
5. How can a physician increase his or her patients' compliance when it comes to nutrition and exercise counseling? Who can the physician refer the patient to achieve support on lifestyle changes?
6. Many physicians report that the majority of their knowledge on nutrition and exercise is obtained from self-reading. Given the importance of a healthy diet and physical activity, how often and what resources should physicians use to learn more about nutrition and exercise?

THE CLINICAL SIGNIFICANCE OF NUTRITION AND EXERCISE EDUCATION

While physicians and researchers agree that eating healthy and exercising regularly are important and lead to significant health benefits, many patients find it difficult to actively monitor their diets or make an effort to exercise. This may be because people do not receive an immediate reward if they eat healthy or exercise. The opposite may also be true; most people do not see noticeable short-term repercussions to their unhealthy lifestyle habits. But the long-term effects are definitely significant [1]. According to a report published by Public Health Agency of Canada in 2009, nine out of ten individuals over the age of 20 years have at least one of the following cardiovascular diseases (CVD) risk factors: smoking, physical inactivity during leisure time, less than recommended daily consumption of vegetables and fruit, stress, overweight or obesity, high blood pressure, or diabetes [13]. Two in five have three or more of these risk factors. Addressing these risk factors will reduce the risk not only of CVD, but also of many other chronic diseases such as diabetes and obesity, which share the same risk factors [13]. Physicians must therefore educate their patients regarding the benefits of healthy diet and exercise habits. A problem arises when physicians themselves are not given enough training or knowledge to confidently advise patients about these issues.

Patients expect physicians to be knowledgeable and competent in discussing nutrition and physical activity; however, the majority of physicians feel ill prepared to do so [8, 9].

Currently, there is a clear deficiency in the practical nutrition and exercise education in undergraduate medical curricula [2, 3, 4, 5]. In a survey of practicing Family Physicians in British Columbia, 82.3% of respondents thought that their nutrition training in medical school was inadequate [6]. In a study that surveyed 246 medical students from two large universities in Western Canada, it was found that although medical students perceived prescribing physical activity as important, they perceived they had less than moderate competence for doing so [7].

Both practicing physicians and medical students indicate that more nutrition and exercise education is needed in medical school in order for them to feel confident in counseling patients about these topics [3, 4]. Dedicating more time for nutrition and exercise education will not only be useful for patient counseling, but will directly benefit the medical students as well. Interestingly when physicians are convinced that healthy eating and regular exercise are important to a healthy life, they will be more likely to engage in these healthy habits and provide counseling to patients [8]. Physicians who practice what they preach receive a much higher compliance rate when counseling patients about healthy lifestyle habits [8]. It is therefore very important to instill a positive attitude towards healthy eating and exercise in medical students.

Physicians are at the forefront for assisting patients to prevent chronic diseases by counseling patients to exercise regularly and to follow healthy diets. Patients see physicians as trusted and reliable sources of information regarding nutrition and exercise; it is thus expected that physicians could provide accurate information and counseling to patients. On the contrary, Canadian physicians consider themselves ill equipped to deal with patients' nutritional and exercise needs [7,9,10,11]. Many reasons may prevent a physician from counseling patients about their nutrition and exercise. However, physicians primarily identify that they lack confidence, knowledge, and clinical practice when it comes to nutritional and exercise related topics [12]. This session is designed to fill these gaps by providing students with an introduction to nutrition education and the associated practical training.

MEDICAL STUDENT WELLNESS AND CHALLENGES

By: Preeni Rathuge (1T8)

Maintaining healthy eating habits and regular exercise can be a daunting task when faced with the busy workload of medical school. Between balancing school, family, and other commitments, a healthy lifestyle can often fall to the wayside. However, as future clinicians it is important to remember that physicians who are active and follow healthy eating habits are more likely to receive a higher compliance rate when counseling

patients about healthy lifestyle choices [8]. Participating in healthy behaviors can allow health care professionals to develop personal resources to better advise and assist clients effectively in their own self-care. Moreover, engaging in healthy habits is key to managing the stressful lifestyle clinicians lead [14].

Finding the time to exercise may seem nearly impossible, but with effort and advanced planning you will be able to maintain or start an exercise routine that works for you. Make sure to reserve time in your schedule to go to the gym, play a game of basketball, or participate in whatever activities you enjoy to promote fitness. Scheduling time into your daily itinerary for exercise can help you ensure that you have the time available to maintain your physical activity goals. It also allows you to identify when you are not meeting those goals. Another suggestion is to join class intramurals with friends. Using sport to enhance your fitness is a great way to get to know classmates and can make exercising fun. There is also evidence to support that participating in-group exercise leads to greater situational involvement in recreational physical activity [32]. The University of Toronto has several free and low cost options for weekly exercise classes, which may work better for students who prefer a regular commitment. Most importantly, participate and make space for physical activity that you enjoy; you don't want physical activity to become a chore [33]. If you find yourself too busy to commit to a weekly regimen, choosing to take the stairs instead of the elevator, going for 10 minute brisk walks on your work breaks or choosing to walk home instead of subway may be ways to maintain activity.

Eating well can also be a challenge, especially when you are travelling from lectures to the hospital. Students often use Sunday evenings to prep meals including chopping up vegetables and fruit for the entire week. Save yourself some time by cooking meals in large batches. Some students portion and freeze meals for easy re-heating while they are on the go. Time saving appliances such as a slow cooker or pressure cooker can also be very useful. There are also many healthy convenient food options available at grocery stores including pre-cut fruits and vegetables, yogurt, canned fish (tuna), premade hummus and more that will save you preparation time. When you don't have time to make your lunch or dinner, try to stick to the healthy options available while eating out such as foods that have been baked, steamed or roasted (refer to the resources for more information). Busy individuals will often rely on caffeinated beverages such as colas, coffees, and teas. You can decrease the caloric impact of these drinks by making or purchasing regular coffee instead of sweetened coffee drinks. You can also choose to get specialty drinks half-sweetened or without whipped toppings.

Maintaining healthy habits during medical school can be challenging, but it is not impossible. Here are some links that can get you going on the right track:

<http://healthandwellness.utoronto.ca/> - Health and Wellness offers U of T students a wide range of services to support them in achieving their personal and academic best.

<http://www.ohpsa.utoronto.ca/> - The Office of Health Professions Student Affairs offers personal counselling and can connect you to other resources throughout U of T.

<https://www.eatrightontario.ca/en/default.aspx> - EatRight Ontario has a meal planner containing a full week's worth of meals for one or two individuals, customizable shopping lists, healthy recipes, and contact information for consultation with Registered Dietitians in Ontario.

<https://www.eatrightontario.ca/en/Articles/Dining-Out/Top-10-tips-for-eating-out#.VrTmk84TXKM> – Eat Right Ontario also has tips helping you to make healthy choices while eating out.

<http://harthouse.ca/fitness/registered-classes/> - Hart House gym at the St. George Campus has several weekly low-cost/free exercise classes.

<https://www.utm.utoronto.ca/athletics/fitness> - UTM fitness site has links to resources as well as access to group fitness classes.

EXPLORING POPULAR DIETS WORKSHEET (Worksheet B)

Please answer the following questions prior to the scheduled session and bring the worksheet to class.

1. What is the research behind these diets? Do they work? Do all diets work? Think critically about these popular diets.
2. There was a low fat craze in the 90s. What impact did this have?
3. What is the metabolic impact of yo-yo dieting?
4. Describe the major feature of the Atkins diet. What biochemical process does this diet utilize?
5. Is the Atkins Diet safe for diabetic patients? Why or why not?
6. What distinguished the Ornish diet from other diets? Is meat consumed as part of this diet?
7. The Ornish diet has a list of foods that shouldn't be eaten, is there evidence to suggest these foods should be avoided? What is the impact of removing foods or food groups from a diet?

8. Describe the major features of the Weight Watchers program and who is eligible to join?
9. The Zone diet suggests that a certain split of macronutrients can keep hormones such as insulin from being released in high amounts. What is this split/ratio and how can you estimate this in a typical meal?
10. Describe the features of the Mediterranean diet and list some of the food items consumed on a daily basis.
11. Which of the following diets, Atkins, Ornish, Weight Watchers, Zone, is best for weight-loss? (Refer to Dansinger et al. study. Link on page 15)

EXPLORING POPULAR DIETS

There are many diets that are used to achieve weight loss, various health benefits or to manage a specific disorder. In this section, we will explore the Atkins, Ornish, Weight Watchers, Zone, and Mediterranean diets.

ATKINS DIET:

The Atkins diet is a popular low carbohydrate diet that was created by Dr. Robert Atkins (cardiologist) in 1972. This diet emphasizes protein and fat intake while restricting carbohydrate intake. It has been used to help individuals lose weight, increase energy, or manage certain health problems such as high blood pressure [15]. Individuals following this diet have a macronutrient break down of 35% protein, 50% fat, and only 10% from carbohydrates [15,16]. Very low carbohydrate diets alter the metabolism generally in two different manners. First, these diets induce the production of ketone bodies to maintain tissues and organs that are not receiving sufficient glucose. Second, they promote a slower glycolytic pathway and increased gluconeogenesis in order to maintain glycemia and organ function [15].

The Atkins diet contains 4 phases:

Phase 1: Induction

Carbohydrate intake is limited at 20 grams/day that come mainly from vegetables.

Phase 2: Ongoing Weight loss

Nutrient-dense and fiber rich foods are added as additional carbohydrate sources, at an increased rate of 25 grams during the first week of this phase, 30 grams during the second week, and 30 grams each subsequent week until weight stops going down. When weight loss stops - take away 5 grams of carbohydrates from the daily intake.

Phase 3: Pre-Maintenance

Carbohydrate intake is increased by 10 grams each week until weight loss becomes very gradual.

Phase 4: Lifetime Maintenance

New carbohydrate sources may be added while carefully monitoring weight to ensure it does not go up. If weight does go up, individuals should decrease the amount of carbs consumed each day and cut back on the new sources of carbs that have been introduced.

Summary:

In a meta-analysis examining weight loss and cardiovascular risk factors in low-carb diets vs low-fat diets it was found that after 6 months, individuals assigned to low-carbohydrate diets had lost more weight than individuals randomized to low-fat diets [16]. This difference was no longer obvious after 12 months and there were no differences in blood pressure. Triglyceride and high-density lipoprotein cholesterol values changed more favorably in individuals assigned to low-carbohydrate diets, but total cholesterol and low-density lipoprotein cholesterol values changed more favorably in individuals assigned to low-fat diets [16].

The authors concluded that low-carbohydrate, non-energy-restricted diets appear to be at least as effective as low-fat, energy-restricted diets in inducing weight loss for up to 1 year. However, potential favorable changes in triglyceride and high-density lipoprotein cholesterol values should be weighed against potential unfavorable changes in low-density lipoprotein cholesterol values when low-carbohydrate diets to induce weight loss are considered [16].

Moreover if the Atkins diet is strictly adhered to over the long term, with no more than 50 g/day of carbohydrate, then nutritional issues may occur. Although plasma levels have not been measured, a study found that, in the Atkins group, a significant proportion of individuals shifted to intakes with a risk of dietary inadequacy for thiamine, folic acid, vitamin C, iron and magnesium at the 8-week time point [28].

More resources:

<http://www.mayoclinic.org/healthy-lifestyle/weight-loss/in-depth/atkins-diet/art-20048485?pg=2>

<http://www.webmd.com/diet/atkins-diet-what-it-is?page=1>

<https://www.youtube.com/watch?t=13&v=PN0YLnjViU8>

ORNISH DIET:

The Ornish diet is a low fat diet that was created by Dr. Dean Ornish. The diet limits fat intake to less than 10% of total calories/day and most foods with any cholesterol or refined carbohydrates, oils, excessive caffeine and nearly all animal products besides egg whites and one cup per day of nonfat milk or yogurt are banned [17]. Fiber and lots of complex carbohydrates are emphasized making the Ornish Diet a vegetarian based diet. Although it is a low fat diet, it supplies dieters with essential fatty acids but no excess fat to provide optimal opportunity for regression of coronary atherosclerosis [17]. The rationale for the diet is that cholesterol is found only in animal products, which also tend to be higher in saturated fat. Also, people found it easier to become a vegetarian than to eat, say, 2 oz or 3 oz of meat a day.

Along with adhering to the Ornish diet, it was found that certain stress reduction techniques such as stretching, breathing, meditation, visualization, and progressive relaxation techniques are effective of reversing coronary heart disease. According to Dr. Ornish, "stress is not simply a function of what a person does; perhaps more important is how a person reacts to what he or she does, by practicing these techniques regularly, people can be in the same family and the same work environment and not react in such harmful ways." [17].

Summary:

The Ornish Lifestyle Heart Trial [29] randomized 48 patients with moderate to severe coronary heart disease (CHD) to intensive life-style changes or usual care. The intensive life-style changes included a vegetarian diet with 7% of caloric intake coming from fat, moderate aerobic exercise, stress management training, smoking cessation, and group psychosocial support. A total of 195 coronary artery lesions were analyzed angiographically. Overall, 82% of experimental group patients had an average change toward lesion regression. At five years, there were 2.5 times fewer cardiac events in the intervention group, and the average percent diameter stenosis showed an 8% decrease in diameter, whereas the control group had 28% progression. However, the data are

difficult to interpret due to the confounding effects of exercise, stress reduction, and 11-kg weight loss in the intervention group. Although the intervention seems beneficial, the small sample size and intense life-style changes raise concerns about the universal sustainability of such a program.

More resources:

<http://www.sciencedirect.com/science/article/pii/S0022534701685185>

http://journals.lww.com/jcjournal/Abstract/1992/11000/Adherence_and_Acceptability_of_a_Low_Fat..9.aspx

<http://health.usnews.com/best-diet/ornish-diet>

<http://www.everydayhealth.com/diet-and-nutrition/the-ornish-diet.aspx>

WEIGHT WATCHERS:

The Weight Watcher's program helps individual lose weight via regular meetings, monitoring and encouragement, and self-help group type sessions. An online WW program is also now available. A dieter needs constant positive reinforcement therefore establishing a support network at the start of any weight-loss attempt is crucial for both short and long term success. The dieter aims for a target weight or BMI (body mass index) of between 20 and 25. Weight Watchers will accept any participant as long as they are at least 2.3 kg (5 lbs) over the minimum weight for their height.

Portions of foods are assigned points. If a food is high in fiber and/or low in fat it is worth fewer points. The higher the fiber content, or the lower the fat content, the more of that food you can eat each day. Fruits and vegetables are assigned zero points!

SMARTPOINTS™ AT A GLANCE

- 1. A new formula:** The SmartPoints system, based on the latest nutritional science, inspires healthy eating by making protein-rich foods a better value and foods higher in sugar and saturated fat more “expensive.”
- 2. Daily SmartPoints Target:** You have a daily Target based on your height, weight, gender and age. You’ll get this Target online or in your meeting.
- 3. Weekly SmartPoints.** You have Weekly SmartPoints, which are based on the same factors as your daily Target. Weekly SmartPoints add leeway to your plan. You can choose to use them or not!

4. FitPoints Activity Goal. You have a personalized FitPoints activity goal based on your preferences and lifestyle. FitPoints focuses on overall movement, not just formal “exercise.” Exercising as a means for earning more food points is discouraged.

5. Tracking. Tracking is still an integral part of this plan. You can use your online tools and your Mobile app (if you are a subscriber.)

Summary:

Weight Watchers has recently (2016) changed their points system and program and therefore studies examining the effectiveness of this new system have not been published. However lots of evidence is available for the older programs. For example in one study comparing the effects of four commercially available weight-loss programs on lipid-based cardiovascular risk factors found that significant weight loss was achieved by all dieting groups (5–9 kg at 6 months) but no significant difference was observed between diets at 6 months [30]. The Weight Watchers and Rosemary Conley (low-fat) diets were followed by significant reductions in plasma LDL cholesterol, whereas the Atkins (low-carbohydrate) and Weight Watchers diets were followed by marked reductions in plasma TAG (–38.2 % and –22.6 % at 6 months respectively, $P < 0.01$). These latter two diets were associated with an increase in LDL particle size, a change that has been linked to reduced CVD risk.

More resources:

<http://888-3-florine.com/lancet-study.html>

<http://simple-nourished-living.com/2015/12/weight-watchers-launches-new-smartpoints-beyond-scale-program/>

ZONE DIET:

According to Dr. Berry Sears (PhD, biochemistry), “food is like a drug so you need to take the right amount at the right time” The Zone diet suggests that your calorie intake should consist of 40% carbohydrates, 30% protein and 30% fat [18]. According to Dr. Sears, increased carbohydrate consumption and a subsequent release of high amounts of insulin leads to excess weight gain. Insulin then promotes the production of fat from the excess carbohydrates [18]. By managing a 40/30/30 split of macronutrients, you can keep your hormones in the zone and stay healthy.

Women on the Zone diet typically consume no more than 1,200 calories while men have a calorie limit of 1,500 calories. In one day, individuals are permitted to eat five

times a day; three meals and two snacks. Each meal should maintain the 40/30/30 split of carbs/proteins/fats. This translates to dividing a plate into three equal sections. A lean protein such as chicken or fish should occupy one-third of the plate and the other two sections should be filled with non-starchy carbohydrates (fruits or vegetables). The plate is then topped off with healthy fats coming from sources like olive oil, fish oil, almonds, or avocado.

Protein sources that are encouraged by the Zone diet include skinless chicken, turkey, fish, egg whites, low-fat dairy, tofu and soy substitutes. The Zone diet classifies carbs as either “good” or “bad” and dieters are instructed to choose those that have a low glycemic index (GI). The glycemic index is a scale that ranks carbohydrate-containing foods by how much they raise blood glucose levels. Low GI foods have a smaller effect on blood sugar than high GI foods and have been shown to aid in weight management through appetite control [31]. Dieters can eat most vegetables and fruits but are instructed to stay away from corn, carrots, bananas and raisins. Oatmeal and barley are recommended while staying away from pasta, white bread, white rice, cereals and potatoes. Small amounts of healthy fats are part of each meal but dieters should avoid fatty red meat, egg yolk, liver and organ meats, and processed foods that are high in saturated fats.

An important part of the Zone diet is meal timing. Eating every five hours to ensure that blood sugar does not decrease too much and trigger hunger is essential.

The Zone diet's basic rules

Have a Zone meal or snack no later than one hour after you wake up in the morning

Interval between meals should be between 4 to 6 hours

Have a meal between 2 to 2.5 hours after a snack - regardless of how hungry you are

Before every meal or snack, assess your hunger level. If you are not hungry and your mind is clear, you are in The Zone

Consume eight 8-ounce glasses of water per day

Start the meal/snack with low-fat protein. Then add good carbohydrates with a low glycemic index, such as vegetables and fruits, plus good fats, such as olive oil or avocado

Typical meal protein should weigh about 4 ounces for men and 3 ounces for women

Summary:

The results of studies examining the efficacy of the Zone diet have produced inconsistent results. In a review of literature for studies assessing the effects of body weight control, Jenkins et al. found that alterations in proportion of macronutrients intakes gave inconsistent effects on body weight reduction [34]. They also concluded “no clear picture emerged on the ideal macronutrient profile for weight loss and cardiovascular disease risk factor reduction” [34]. On the other hand, this review indicated that the use of more plant food-based approaches had the greatest effect in reducing cardiovascular disease risk factors, including blood lipids and blood pressure [34].

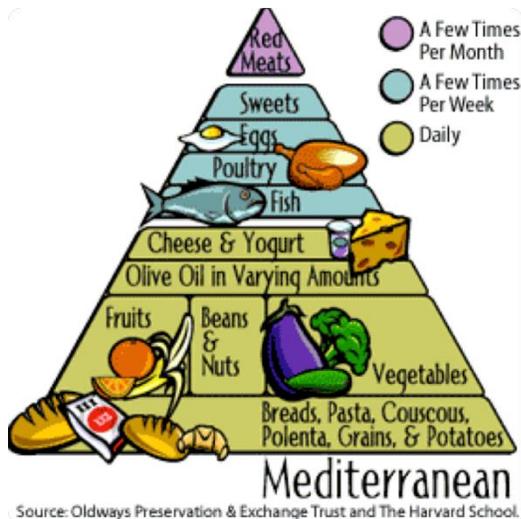
MEDITERRANEAN DIET:

The Mediterranean diet is the diet of Southern Europeans, which has been found to have many health benefits. Dr. David Jenkins at the University of Toronto reported in October 2012 that eating more legumes (a big part of the Mediterranean diet) helps improve glycemic control in people with type 2 diabetes, as well as decreasing the risk of developing coronary heart disease [20].

Individuals following the Mediterranean diet consume a lot of plant foods and fresh fruit. The diet is also characteristic of high consumption of beans, nuts, oats, barely, brown rice and seeds. The main source of dietary fat is olive oil and the main dairy foods are cheese and yogurt. Red meat is only consumed a few times per month but fish, poultry and eggs are consumed a few times per week.

Summary:

In a study that looked at the role of a Mediterranean diet in prevention of cardiovascular disease found that an energy-unrestricted Mediterranean diet supplemented with either extra-virgin olive oil or nuts resulted in an absolute risk reduction of approximately 3 major cardiovascular events of approximately 30% [35]. The participants in the study were high-risk persons who were initially free of cardiovascular disease and they were followed for a median of 4.8 years. The risk of stroke was reduced significantly in the two Mediterranean-diet groups (olive oil group & nuts group) as compared to the control group [35]. This is consistent with epidemiologic studies that showed an inverse association between the Mediterranean diet or olive oil consumption and incident stroke [35].



Comparison of Atkins, Ornish, Weight Watchers and Zone Diets; Which Diet is the Best?

Please read this paper:

Dansinger, M. L., Gleason, J. A., Griffith, J. L., Selker, H. P., & Schaefer, E. J. (2005). Comparison of the Atkins, Ornish, Weight Watchers, and Zone diets for weight loss and heart disease risk reduction: a randomized trial. *Jama*, 293(1), 43-53.

<http://www.ncbi.nlm.nih.gov/pubmed/15632335>

PRACTICE ASSESSING YOUR NUTRITION

Students must now get in pairs and practice using the nutrition assessment tools.

You should try to be as specific as possible and include portions and serving sizes.

You should focus on the 24-hour recall but also ask some of the generic nutrition questions.

If time permits, practice using other nutrition assessment tools.

TOOLS FOR ASSESSING NUTRITION

Taking a nutrition history should be part of the comprehensive health assessment for every patient, regardless of educational, marital, and socioeconomic status. Please read and familiarize yourself with these tools. We will practice using some of these tools in the scheduled session.

Dietary Assessments Tools and Methods

(<http://apps.medsch.ucla.edu/nutrition/dietassess.htm>)

Dietary Assessment

A patient's nutritional status can be evaluated by using and integrating information obtained from a past medical history, family history and a social history. Many complaints such as fatigue, headaches, and digestive disturbances can be improved by changes in diet. Nutrition also plays a pivotal role in prevention. Nutritional assessment becomes especially important when the patient has certain nutritional "red flags", such as:

Elderly

No regular exercise regime and/or sedentary lifestyle

Recent loss of 10% or more of usual body weight

Alcoholism

Taking drugs such as steroids, immunosuppressants

Infection, protracted fever, trauma

Malabsorption syndromes, draining abscesses, renal dialysis

Receiving simple intravenous solutions without oral intake for >10 days

Past Medical History

Below are some areas to inquire about when taking past medical history

Immunizations, hospitalizations, operations, major injuries, chronic illnesses, and significant acute illnesses

Current or recent prescription medications, vitamins and minerals, laxatives, topical medications, OTC medications, and nutritional supplements

Potential drug-nutrient interactions, such as those caused by potassium-wasting diuretics

Food allergies or lactose intolerance

Family History

Family history of cancer, diabetes, heart disease, hypertension, obesity, and osteoporosis

Parents, siblings, children, spouse: include ages, current health status, and cause of death if deceased

Social History

Occupation, daily exercise pattern, marital and family status

Economic status, educational level, residence, emotional response to illness and coping skills

Duration and frequency of use of substances, including tobacco, alcohol, illegal drugs, and caffeine

Dietary restrictions (ex. Vegetarian, religious fasting, kosher, etc.)

Assessing Your Patient's Dietary Intake

There are several methods for obtaining a dietary history. Each has its advantages and disadvantages.

24-hour Recall

An informal, qualitative method in which you ask the patient to recall all of the foods and beverages that were consumed in the last 24 hours, including the quantities and methods of preparation.

An *advantage* of this method is that dietary information is easily obtained. It is also good during a first encounter with a new patient in which there is no other nutritional data. Patients should be able to recall all that they have consumed in the last 24 hours with prompting from the health care professional.

A *disadvantage* of this method is that it is very limited and may not represent a typical food intake for the patient. Data achieved using this method may not represent the long-

term dietary habits of the patient. Estimating food quantities and food ingredients may be difficult especially if the patient ate in restaurants.

Usual Intake/Diet History

This method asks the patient to recall a typical daily intake pattern, including amount, frequencies and methods of preparation. This intake history should include all meals, beverages and snacks.

Advantages of this method are that it evaluates long-term dietary habits and is quick and easy to do. Based on the information acquired, you may identify patients who would benefit from meeting with a registered dietitian.

A *disadvantage* of this method is that a limited amount of information on the actual quantities of food and beverages is obtained. Also, this method only works if a patient can actually describe a "typical" daily intake, which is difficult for those who vary their food intake greatly. In these patients it would be advisable to use the 24-hour recall method. Another disadvantage is that patients may not include foods that they know are unhealthy.

An excellent method to better understand a patient's nutritional status is to use a usual intake and lifestyle recall. This consists of asking the patient to run through a typical day in chronological order, describing all food consumption as well as activities. This method is very helpful because it may reveal other factors that can affect the patient's nutritional and overall health. [For example: (1) the patient sits in traffic for a 3-hour round trip each day; (2) the patient comes home from work late and eat dinner just before bedtime; or (3) the most exercise the patient gets is walking to and from the parking lot at work.]

Food Frequency Questionnaire

<http://sharedresources.fhcrc.org/sites/default/files/FFQ-GNA-Sample.pdf>

This method makes use of a standardized written checklist where patients check off the particular foods or type of foods they consume. It is used to determine trends in patients' consumption of certain foods. The checklist puts together foods with similar nutrient content, and frequencies are listed to identify daily, weekly, or monthly consumption.

An *advantage* of this method is that it makes it possible to identify inadequate intake of any food group, so that dietary and nutrient deficiencies may be identified. The questionnaire can be geared to a patient's pre-existing medical conditions.

Disadvantages include patient error in filling out the questionnaire and no way to find out how foods are prepared. Patients may over- or under-estimate food quantities.

Another *disadvantage* is that foods typically consumed by the patient may be missing from the FFQ and it may be difficult to analyze on the spot.

Dietary Food Log

(See Example

http://www.hopkinsmedicine.org/gim/core_resources/Patient%20Handouts/Tools_May_2012/Food%20Log.pdf)

This method asks the patient to record all food, beverage and snack consumption for a one- week period. Specific foods and quantities should be recorded. The data from the food log may later be entered into a computer program, which will analyze the nutrient components of the foods eaten according to specific name brands or food types.

Patients are asked to enter data into the food log immediately after food is consumed so they do not forget.

The most important *advantage* of this method is that a computer can objectively analyze data obtained. Data on calorie, fat, protein and carbohydrate consumption can be obtained. Also, since patients are asked to enter data immediately after eating, the data is more accurate than other methods.

Disadvantages include patient error in entering accurate food quantities. In addition, it is possible that the week-long food log does not accurately represent a patient's normal eating habits since they know the foods they eat will be analyzed and therefore may eat healthier.

Generic Nutrition Questionnaire

Do not be daunted by the following list. Reading through the sample questions will simply give you an idea of probing questions you might use to ascertain your patient's nutritional status.

Would you describe your appetite as hearty, moderate, or poor?

Are you on a special diet? Specify the type of diet. Who recommended the diet? If you have been on a special diet in the past, define it.

Have you ever had any problems with weight? Underweight or overweight?

Do you eat at approximately the same time every day?

Do you skip meals? If so, when?

Do you usually eat between meals? What do you snack on most often?

Are there any foods you do not eat because you don't think they are good for you? If yes, what?

Are there any foods you do eat regularly because you think they are good for you? If yes, what?

Are there any foods you cannot eat? What happens when you eat this food?

Are there foods you avoid because you don't like them?

How is your food usually prepared, e.g. baked, broiled, fried?

Are you on a diet now to lose or gain weight? If yes, what kind? Who recommended it?

How do you feel about your weight?

Are you taking any vitamin or mineral supplements? What and how often?

Do you smoke? How many cigarettes (cigars or chewing tobacco) per day?

Do you drink any alcohol? How much per day and when?

How often do you exercise? What types of exercise do you do?

Who in the house plans the meals? Buys the food? Prepares the food?

Are there times in the month when there isn't enough money for food or you run out of food?

How many of your meals are eaten at home? School? Work? Restaurants?

How many hot meals do you eat per week?

What condiments do you use? Examples include butter on bread, sugar on cereal, salad dressing, gravy, etc.

TOOLS FOR PHYSICAL ACTIVITY ASSESSMENT

Students must memorize and be comfortable asking the Physical Activity Vital Sign (PAVS) questions. These will be practiced in the session.

1. On average, how many days per week do you engage in moderate to strenuous exercise like a brisk walk?
2. On average, how many minutes do you engage in exercise at this level?

These two screening questions will provide a snapshot of whether patients are meeting the current physical activity guidelines of 150 minutes of moderate intensity physical activity each week. By repeating the assessment of PAVS at every clinic visit, the physician can track changes in patients' physical activity over time. The PAVS is highly associated with decreased levels of BMI and odds of obesity and has been tested for face and discriminant validity.

Students should also be familiar with the PAR-q and PARmed-X forms ****view online****

PAR-Q (Physical Activity Readiness Questionnaire)

http://www.exerciseismedicine.org/assets/page_documents/Par-Q.pdf

Patients fill out the PAR-Q before they become more active to ensure that it is safe for them to do so.

PARmed-X (Physical Activity Readiness Medical Examination)

<http://camrosepoliceservice.ca/wp-content/uploads/2012/12/PARmed-X.pdf>

The PAR-Q by itself provides adequate screening for the majority of people. However, some individuals may require a medical evaluation and specific advice (exercise prescription) due to one or more positive responses to the PAR-Q. Students should familiarize themselves with the PAR-Q and PARmed-X forms and their respective uses. Further reading on sedentary behavior. Do not be an active couch potato!

http://www.csep.ca/CMFiles/Guidelines/CSEP_Guidelines_Handbook.pdf

HOW MANY CALORIES?

The goal is to show that some meals are much more macromolecule friendly than others.

1) Eggs



Calories: 80 (per egg)

Fats: 5 g

Protein: 7 g

Carbohydrates: 0 g

2) 6" Tuna fish sandwich (Subway, toppings in picture)



Calories: 480

Fats: 25 g

Protein: 20 g

Carbohydrates: 44 g

3) Plain Yogurt, skim milk



Calories: 137 (per 1 cup, 245 g)

Fats: 0.4 g

Protein: 14 g

Carbohydrates: 19 g

4) Chicken breast with rice



Calories: $130 + 206 = 336$ (per 4 oz chicken and 1 cup cooked rice)

Fats: $3 \text{ g} + 0.4 \text{ g} = 3.4 \text{ g}$

Protein: $25 \text{ g} + 4.2 \text{ g} = 29.2 \text{ g}$

Carbohydrates: $0 \text{ g} + 45 \text{ g} = 45 \text{ g}$

5) Ice cream



Calories: 200 (per 1 scoop)
Fats: 11 g
Protein: 3.5 g
Carbohydrates: 24 g

6) Caesar salad (main course)



Calories: 180 (per 330 g)
Fats: 13 g
Protein: 3.5 g
Carbohydrates: 10 g

PHYSICAL ACTIVITY GUIDELINES

New Canadian Physical Activity Guidelines released

Children need at least 60 minutes of physical activity per day and adults 150 minutes per week

TORONTO (ONTARIO) January 24, 2011 – The Canadian Society for Exercise Physiology (CSEP) today announced new Canadian Physical Activity Guidelines. The new guidelines state children (5-11 years) and youth (12-17 years) require at least 60 minutes of moderate- to vigorous-intensity activity per day while adults (18-64 years) and older adults (65 years and older) must get at least 150 minutes of moderate- to vigorous-intensity physical activity per week. Importantly, Canadians should try and exceed the minimum activity thresholds as the greater the variety, intensity and duration of the physical activity, the greater the health benefit.

"The new Physical Activity Guidelines provide a minimum target to gain substantial health benefits. Currently, only 9 per cent of boys and 4 per cent of girls accumulate 60 minutes of moderate- to vigorous-intensity physical activity per day," says Dr. Mark Tremblay, Chair of the Physical Activity Guidelines Committee of the CSEP. "Canadians must add more physical activity to their daily routines to promote and preserve their health and well-being."

These guidelines are the result of over four years of research analysis funded by several groups including the Public Health Agency of Canada. They provide clear and concise instructions and tips for Canadians to achieve required levels of physical activity.

The new physical activity guidelines state:

Children (5-11 years) and Youth (12-17 years)

- For health benefits, children aged 5-11 years and youth aged 12-17 years should accumulate at least 60 minutes of moderate- to vigorous-intensity physical activity daily. This should include:
 - Vigorous-intensity activities at least 3 days per week
 - Activities that strengthen muscle and bone at least 3 days per week
- More daily physical activity provides greater health benefits.

Adults (18-64 years)

- To achieve health benefits, adults aged 18-64 years should accumulate at least 150 minutes of moderate- to vigorous-intensity aerobic physical activity per week, in bouts of 10 minutes or more.
- It is also beneficial to add muscle and bone strengthening activities using major muscle groups, at least 2 days per week.
- More physical activity provides greater health benefits.

Older Adults (65 years and older)

- To achieve health benefits and improve functional abilities, adults aged 65 years and older should accumulate at least 150 minutes of moderate- to vigorous-intensity aerobic physical activity per week, in bouts of 10 minutes or more.



- It is also beneficial to add muscle and bone strengthening activities using major muscle groups, at least 2 days per week.
- Those with poor mobility should perform physical activities to enhance balance and prevent falls.
- More physical activity provides greater health benefits

"As leaders in physical activity, we aim to increase the Canadian public's awareness, adoption and implementation of the Canadian Physical Activity Guidelines," says Audrey Hicks, President of CSEP. "We've worked with numerous partners, including the Healthy Active Living and Obesity (HALO) Research Group at the Children's Hospital of Eastern Ontario (CHEO), to develop the new Guidelines. Our scientists have undertaken the most rigorous process to date to develop guidelines that reflect the evidence and will truly benefit all Canadians".

The new Canadian Physical Activity Guidelines can be found online and are downloadable on CSEP's website: www.csep.ca/guidelines.

About the Canadian Society for Exercise Physiology

The Canadian Society for Exercise Physiology (CSEP) is the principal body for physical activity, health and fitness research and personal training in Canada. CSEP fosters the generation, growth, synthesis, transfer and application of the highest quality research, education and training related to exercise physiology and science. CSEP is the GOLD STANDARD of health and fitness professionals dedicated to getting Canadians active safely by providing the highest quality customized and specialized physical activity and fitness programs, guidance and advice based on extensive training and evidence-based research. For more information, visit www.csep.ca

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For more information, to schedule an interview or speak to a spokesperson, please contact:

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THE LINK BETWEEN NUTRITION AND EXERCISE

By Riad Al Sabbagh

Calories are the link between nutrition and exercise.

Calories Explained

The first law of thermodynamics states that energy cannot be created or destroyed, it can only be transformed from one type to another [21]. This fundamental law is integral to whether an individual will lose or gain weight. Ultimately, body weight is dependent only on an individual's caloric balance (calories consumed versus calories burned) [22].

What is a Calorie?

A calorie, as commonly referred to on food nutrition labels, is a unit of energy. More specifically, a calorie is the amount of energy needed to raise the temperature of 1 liter of water by 1 degree Celsius [23]. Protein, fat and carbohydrates molecules in the food consumed by an individual contain energy that the body uses. The total amount of the energy stored in the food you are eating is represented by the calorie content of the food as indicated on its nutritional label.

How Does Your Body Use Calories?

Your body is capable of doing only two things with the calorie energy that it absorbs; it must either burn it or store it for later use [24]. This is how the first law of thermodynamics explains the effect of calories on our bodies. When we eat food the calories that are in it can never disappear, they can only change form. In their food form calories are stored as chemical energy in the bonds of the food molecules [24]. When we eat, calories are transformed or burned into the different types of energy that your body utilizes or produces each day like heat energy, electrical energy, sound energy, and kinetic (movement) energy [24]. If however the calories absorbed from food are not burned, they are stored in your body again as more chemical energy. Unfortunately, the primary storage mechanism for the excess calories you consume is fat, rather than muscle [25].

Calorie Rules for Weight Loss and Weight Gain

These rules are absolutely fundamental to determining how much you weigh, and it is impossible to contravene them. They are the following:

If you eat more calories than you burn you will gain weight.

If you burn more calories than you eat you will lose weight.

If you eat the same amount of calories that you burn your weight will not change.

To maintain basic functions, the body is constantly burning a minimum amount of calories that is used to support the function of vital organs like your heart and brain [26]. This rate of calorie burning is called your basal metabolic rate (BMR). When you are moving or doing any activity, your body is required to burn more calories to facilitate this movement. Therefore, on any given day the total number of calories you burn is the sum of your basal metabolic rate plus all the additional calories burned from the activities you do [26]. To calculate your BMR, you could use an online BMR calculator (you will need to input your current weight, height, and sex).

Once you know your BMR, you need to figure out how many calories you can consume in a day to maintain your current body weight. The Harris-Benedict Equation is a formula that uses your BMR and then applies an activity factor to determine your total daily energy expenditure [27].

To determine your total daily calorie needs, multiply your BMR by the appropriate activity factor, as follows:

If you are sedentary (little or no exercise):

Calorie-Calculation = $BMR \times 1.2$

If you are lightly active (light exercise/sports 1-3 days/week): Calorie-Calculation = $BMR \times 1.375$

If you are moderately active (moderate exercise/sports 3-5 days/week):

Calorie-Calculation = $BMR \times 1.55$

If you are very active (hard exercise/sports 6-7 days a week): Calorie-Calculation = $BMR \times 1.725$

If you are extra active (very hard exercise/sports & physical job or 2x training):

Calorie-Calculation = $BMR \times 1.9$

As an example, let's assume that you've determined your BMR to be 1,800. You are lightly active and therefore you multiply your BMR by 1.375 ($1,800 \times 1.375 = 2,475$ calories). This gives you the number of calories you can consume in order to maintain your body weight. If you were interested in losing weight, you would need to decrease

your daily caloric intake by 500 calories (2,475 - 500=1,975). A 500-calorie deficit will allow you to lose weight at a healthy rate of one to two pounds per week.

Conclusions About Calories

If you want to lose weight, you need to make sure that you consume fewer calories each day than you burn and you will lose weight. Although the concept explained here reduces weight gain and weight loss to a simple formula, it is important to apply this knowledge safely. If you're trying to lose weight, the best approach is to exercise regularly, get your calories from nutritious sources, and maintain a healthy rate of weight loss. A healthy rate of weight loss is about 1 or 2 pounds each week (depending on how much fat you have available to lose). This corresponds to burning about 500 to 1,000 calories more than you consume each day or eating 500 calories fewer.

Resources:

Online BMR Calculator: <http://www.bmi-calculator.net/bmr-calculator/>

Food Balance and Obesity: <http://www.nhlbi.nih.gov/health/educational/wecan/healthy-weight-basics/balance.htm>

THE BENEFITS OF EXERCISE AND ROLE IN DISEASE PREVENTION

The Benefits of Physical Activity

(http://www.cdc.gov/physicalactivity/everyone/health/index.html?s_cid=cs_284)

Regular physical activity is one of the most important things you can do for your health. It can help:

- Control your weight
- Reduce your risk of cardiovascular disease
- Reduce your risk for type 2 diabetes and metabolic syndrome
- Reduce your risk of some cancers
- Strengthen your bones and muscles
- Improve your mental health and mood
- Improve your ability to do daily activities and prevent falls, if you're an older adult
- Increase your chances of living longer

If you're not sure about becoming active or boosting your level of physical activity because you're afraid of getting hurt, the good news is that **moderate-intensity aerobic activity**, like brisk walking, is generally **safe for most people**.

Start slowly. Cardiac events, such as a heart attack, are rare during physical activity. But the risk does go up when you suddenly become much more active than usual. For example, you can put yourself at risk if you don't usually get much physical activity and then all of a sudden do vigorous-intensity aerobic activity, like shoveling snow. That's why it's important to start slowly and gradually increase your level of activity.

If you have a chronic health condition such as arthritis, diabetes, or heart disease, talk with your doctor to find out if your condition limits, in any way, your ability to be active. Then, work with your doctor to come up with a physical activity plan that matches your abilities. If your condition stops you from meeting the minimum *Guidelines*, try to do as much as you can. What's important is that you avoid being inactive. Even 60 minutes a week of moderate-intensity aerobic activity is good for you.

The bottom line is - the health benefits of physical activity far outweigh the risks of getting hurt.

If you want to know more about how physical activity improves your health, the section below gives more detail on what research studies have found.

1. Control Your Weight

Looking to get to or stay at a healthy weight? Both diet and physical activity play a critical role in controlling your weight. You gain weight when the calories you burn, including those burned during physical activity, are less than the calories you eat or drink.

To maintain your weight: Work your way up to 150 minutes of moderate-intensity aerobic activity, 75 minutes of vigorous-intensity aerobic activity, or an equivalent mix of the two each week. Strong scientific evidence shows that physical activity can help you maintain your weight over time. However, the exact amount of physical activity needed to do this is not clear since it varies greatly from person to person. It's possible that you may need to do more than the equivalent of 150 minutes of moderate-intensity activity a week to maintain your weight.

To lose weight and keep it off: You will need a high amount of physical activity unless you also adjust your diet and reduce the amount of calories you're eating and drinking. Getting to and staying at a healthy weight requires both regular physical activity and a healthy eating plan. The CDC has some great tools and information about nutrition, physical activity and weight loss.

2. Reduce Your Risk of Cardiovascular Disease

Heart disease and stroke are two of the leading causes of death in the United States. But following the Guidelines and getting at least 150 minutes a week (2 hours and 30 minutes) of moderate-intensity aerobic activity can put you at a lower risk for these diseases. You can reduce your risk even further with more physical activity. Regular physical activity can also lower your blood pressure and improve your cholesterol levels.

3. Reduce your risk of Type 2 Diabetes and Metabolic Syndrome

Regular physical activity can reduce your risk of developing type 2 diabetes and metabolic syndrome. Metabolic syndrome is a condition in which you have some combination of too much fat around the waist, high blood pressure, low HDL cholesterol, high triglycerides, or high blood sugar. Research shows that lower rates of these conditions are seen with 120 to 150 minutes (2 hours to 2 hours and 30 minutes) a week of at least moderate-intensity aerobic activity. And the more physical activity you do, the lower your risk will be.

Already have type 2 diabetes? Regular physical activity can help control your blood glucose levels..

4. Reduce Your Risk of Some Cancers

Being physically active lowers your risk for two types of cancer: colon and breast. Research shows that:

Physically active people have a lower risk of colon cancer than do people who are not active.

Physically active women have a lower risk of breast cancer than do people who are not active.

Reduce your risk of endometrial and lung cancer

Although the research is not yet final, some findings suggest that your risk of endometrial cancer and lung cancer may be lower if you get regular physical activity compared to people who are not active.

Improve your quality of life

If you are a cancer survivor, research shows that getting regular physical activity not only helps give you a better quality of life, but also improves your physical fitness.

5. Strengthen Your Bones and Muscles

As you age, it's important to protect your bones, joints and muscles. Not only do they support your body and help you move, but keeping bones, joints and muscles healthy can help ensure that you're able to do your daily activities and be physically active. Research shows that doing **aerobic, muscle-strengthening and bone-strengthening physical activity** of at least a moderately-intense level **can slow the loss of bone density** that comes with age.

Hip fracture is a serious health condition that can have life-changing negative effects, especially if you're an older adult. But research shows that people who do 120 to 300 minutes of at least moderate-intensity aerobic activity each week have a lower risk of hip fracture.

Regular physical activity helps with arthritis and other conditions affecting the joints. If you have arthritis, research shows that doing 130 to 150 (2 hours and 10 minutes to 2 hours and 30 minutes) a week of moderate-intensity, low-impact aerobic activity can not only improve your ability to manage pain and do everyday tasks, but it can also make your quality of life better.

Build strong, healthy muscles. Muscle-strengthening activities can help you increase or maintain your muscle mass and strength. Slowly increasing the amount of weight and number of repetitions you do will give you even more benefits, no matter your age.

6. Improve Your Mental Health and Mood

Regular physical activity can help keep your thinking, learning, and judgment skills sharp as you age. It can also reduce your risk of depression and may help you sleep better. Research has shown that doing aerobic or a mix of aerobic and muscle-strengthening activities 3 to 5 times a week for 30 to 60 minutes can give you these mental health benefits. Some scientific evidence has also shown that even lower levels of physical activity can be beneficial.

7. Improve Your Ability to do Daily Activities and Prevent Falls

A functional limitation is a loss of the ability to do everyday activities such as climbing stairs, grocery shopping, or playing with your grandchildren.

How does this relate to physical activity? If you're a physically active middle-aged or older adult, you have a lower risk of functional limitations than people who are inactive

Already have trouble doing some of your everyday activities? Aerobic and muscle-strengthening activities can help improve your ability to do these types of tasks.

Are you an older adult who is at risk for falls? Research shows that doing **balance** and **muscle-strengthening activities** each week along with **moderate-intensity aerobic activity**, like brisk walking, can help reduce your risk of falling.

8. Increase Your Chances of Living Longer

Science shows that physical activity can reduce your risk of dying early from the leading causes of death, like heart disease and some cancers. This is remarkable in two ways:

Only a few lifestyle choices have as large an impact on your health as physical activity. People who are physically active for about 7 hours a week have a 40 percent lower risk of dying early than those who are active for less than 30 minutes a week.

You don't have to do high amounts of activity or vigorous-intensity activity to reduce your risk of premature death. You can put yourself at lower risk of dying early by doing at least 150 minutes a week of moderate-intensity aerobic activity.

ROLE-PLAYS

Students should separate into pairs and role-play each scenario for 15 minutes followed by a 15 minute debrief.

One student should play the physician while the other plays the patient.

Please practice using the 24-hour recall dietary assessment tool and PAVS.

A patient answer key is provided and is to be used during the role-play.

Role-Play Scenario One

(Use 24-hour recall and PAVS)

A 31-year-old overweight man is visiting his new family doctor for the first time. He just relocated and is working an office job. His job hours are long and sometimes he has to miss lunch so he eats large portions of fast-food on his way home. His wife complains that he always supersizes his meals. On weekends he takes his kids to the park but doesn't do too much besides walking. He constantly ignores his wife's concern about high BP and says because he's stressed at work. When he spends time with his family they end up ordering take out or going to restaurants to eat. He spends his free time watching TV or reading and occasionally walks his dog in the evening.

Patient Answer Key for Scenario One

24-hour Recall:

- Breakfast: 3 fried bacon strips, 1 whole eggs, and 1 cup of orange juice
- Coffee
- No lunch
- McDonalds drive thru after work: one BigMac, large fries, large diet Coke, chicken burger, and apple pie.
- Dinner: Two large plates of Spaghetti with meatballs, garlic bread, and beer.
- Night snack: large bag of potato chips.

PAVS:

1. On average, how many days per week do you engage in moderate to strenuous exercise like a brisk walk? 0 days
2. On average, how many minutes do you engage in exercise at this level? 0 minutes

Role-Play Scenario Two

(Use Usual Intake Diet History and PAVS)

A 23 year-old female is at her physician's office for a regular check up. Although she is otherwise healthy, the physician notices that she has begun to gain some weight since her last check-up. She agrees that she has been neglecting her health lately as a result of a death in the family. She recently moved back into her parents' house and has very little control over the food she consumes. When she is not at home she is on campus studying for her master's program and she works part time at the local coffee shop. She tries to exercise but lacks the time and motivation to do so. In the past yoga was her source of exercise and she is thinking about signing up for a yoga class but she is currently working to pay off her student debt.

Patient Answer Key for Scenario Two

Usual Intake:

Wake up at 8:00 am and have morning cup of home-made black coffee with a medium size bowl of cereal and milk

Once on campus, she has lunch at noon (usually a vegetarian sandwich from the university cafeteria)

At 3:00 pm she has a Tim Horton's coffee or tea with a muffin

She eats dinner at home with her family (usually a large plate of rice and chicken or beef)

She usually snacks on almonds, other nuts or chips while she is studying

While working at the local coffee shop she drinks lattes and usually has a donut too

PAVS:

1. On average, how many days per week do you engage in moderate to strenuous exercise like a brisk walk? Only when running to catch the bus on days she is late
2. On average, how many minutes do you engage in exercise at this level? 5 minutes

Role-Play Scenario Three

(Use 24-hour recall and PAVS)

A 65-year-old woman who recently retired from her job as a teacher finally has time to focus on her health. She stopped cooking homemade meals because her only son moved to another country. She is a vegetarian and has a hard time finding already prepared cultural food. Since her son has moved she has lost 15 lbs and is now considered to be underweight. She spends the majority of her day at the community center volunteering and has 1 or 2 meals per day. She likes to exercise but she is unsure of what exercises are safe for people her age. The only exercise she does is maintaining her garden in the spring and summer for an hour a day.

Patient Answer Key for Scenario Three

24-hour Recall:

- Breakfast: Granola bar and tea
- Lunch: Vegetable soup and crackers
- Snack: Celery and carrots
- Dinner: Homemade pasta with vegetables

PAVS:

1. On average, how many days per week do you engage in moderate to strenuous exercise like a brisk walk? 2 days (walking on treadmill)
2. On average, how many minutes do you engage in exercise at this level? 15-20 minutes

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REMINDERS FOR NEXT SESSION

- Review material for Week 9: An Approach to Rational Prescribing, Prescription Writing, and Taking a Medication and Substance Use History
- View Rational Prescribing module and prepare answers to homework questions