Implementing modernize methods to restructure the future health physical activities in busy lifestyle: Need of transformation in new era

Abstract
Physical inactivity is now identified as the fourth leading risk factor for global mortality. Physical inactivity levels are rising in many countries with major implications for the prevalence of non-communicable diseases (NCDs) and the general health of the population worldwide. Like most human behaviours, physical activity is a complex behaviour. Physical activity in our daily lives is determined by a web of factors that has become more intricate over the past century as advances in science and technology continually change our world. In attempting to understand physical activity as a health-enhancing behaviour, it is useful to adopt an ecological perspective. It has been shown that participation in regular physical activity reduces the risk of coronary heart disease and stroke, diabetes, hypertension, colon cancer, breast cancer and depression. Additionally, physical activity is a key determinant of energy expenditure, and thus is fundamental to energy balance and weight control.

Keywords: Physical Activity, Health-Enhancing Behaviour, Modernize Methods, Energy Expenditure, Ecological Perspective, Busy Lifestyle

1 Introduction
Choices that you make every day play a crucial role in helping you to maintain your health and well-being both tomorrow and in the years ahead. Making any change in behaviour, such as starting a physical activity program, is significant and can be challenging – the next thing is to make it a habit. Motivation levels fluctuate in everyone; even exercise fanatics find it hard to get motivated from time to time. So before you start, accept that there will be brief setbacks or times when you do not feel like exercising. If this occurs, remind yourself that this is not failure – it’s simply life getting in the way. Be ready for these ‘slips’. Think about some strategies to overcome those hurdles and how you can pick up where you left off. Don't be discouraged. It happens to all of us. The circumstances of human
existence in the 21st century are far different from those that obtained during the remote past. Physical activity is no longer a requirement for daily living; the relationship between eating and physical work has been abrogated. However, genetic evolution has been wholly unable to match the rapidity of cultural change and our genes remain adapted for conditions that existed during their selection by Darwinian mechanisms (Gould, 1980; Wilson,1998; Klein, 1999). This discordance or mismatch between our contemporary lives and our genetic makeup has important pathophysiological implications: coronary atherosclerosis, age-related fractures, obesity and ‘syndrome x’ disorders related to insulin resistance are all promoted by physical inactivity.

2 Physical Inactivity: Leading Risk Factor For Global Mortality

Physical inactivity has been identified as the fourth leading risk factor for global mortality (6% of deaths globally). This follows high blood pressure (13%), tobacco use (9%) and high blood glucose (6%). Overweight and obesity are responsible for 5% of global mortality. Levels of physical inactivity are rising in many countries with major implications for the general health of people worldwide and for the prevalence of NCDs such as cardiovascular disease, diabetes and cancer and their risk factors such as raised blood pressure, raised blood sugar and overweight. Physical inactivity is estimated as being the principal cause for approximately 21–25% of breast and colon cancer burden, 27% of diabetes and approximately 30% of ischaemic heart disease burden (1). In addition, NCDs now account for nearly half of the overall global burden of disease. It is estimated currently that of every 10 deaths, 6 are attributable to non-communicable conditions (2). Global health is being influenced by three trends: population-ageing, rapid unplanned urbanization, and globalization, all of which result in unhealthy environments and behaviours. As a result, the growing prevalence of NCDs and their risk factors has become a global issue affecting both low- and middle-income countries. Nearly 45% of the adult disease burden in these countries is now attributable to NCDs. Many low- and middle-income countries are beginning to suffer the double burden of communicable and noncommunicable diseases, and health systems in these countries now have to cope with the additional costs of treating both. It has been shown that participation in regular physical activity reduces the risk of coronary heart disease and stroke, diabetes, hypertension, colon cancer, breast cancer and depression. Additionally, physical activity is a key determinant of energy expenditure, and thus is fundamental to energy balance and weight control.

3 Healthy Eating Within A Busy Lifestyle

Make healthy eating a priority and you will find yourself more alert, energetic and productive.

BREAKFAST

- **Always eat breakfast** – Breakfast really is ‘the most important meal of the day!’ It boosts your metabolism, provides you with the energy to get through your day, improves concentration and helps prevent you snacking on ‘junk food’ later in the day. There is no excuse for skipping breakfast! It’s one of the fastest and easiest meals we can have, and one of the best changes you can make.
- **High fibre is the way to go** – A high fibre breakfast will give you longer lasting energy; boost your long term health; and help keep you regular. Boost the fibre content of your breakfast by including foods such as wholegrain bread, high fibre cereal, fresh fruit, dried fruit, nuts, seeds, psyllium husks, oats and/or bran.
- **Eat on the run** – Having something for breakfast is better than having nothing at all. If you struggle to squeeze in a proper breakfast, pack a portable breakfast to have on your way to work or once you arrive at work. Healthy options include breakfast bars, yoghurt, fruit, breakfast drinks (e.g. Sustagen or Up ‘n Go), fruit bread or a low-fat bran muffin.
• **Quick and easy breakfasts** - Quick cooking oats; cereal & low fat milk; a smoothie; fruit; low-fat yoghurt; English muffins; fruit toast; creamed corn or baked beans on toast.

**LUNCH**
• **Pack lunch the night before** – To solve the problem of soggy sandwiches, you can pack the sandwich fillers separately and assemble when ready to eat.
• **Make use of leftovers** – Leftovers are a very quick and easy lunch option. Try cooking an extra portion at dinner time and packing it into takeaway container for the next day.
• **Choose a variety of foods from the 5 food groups** – Choose wholegrain carbohydrates + a protein source + vegetables/salad + a low-fat dairy product + fruit.

**DINNER**
• **Have a cook-up on the weekend** – On your least busy day try cooking a couple of different meals, portioning into takeaway containers and storing in the fridge or freezer for dinner on busier nights when you don’t have time to cook.
• **Frozen meals** – Limit these to twice per week, because of their high salt content. Choose low fat options & serve these meals with extra vegetables or salad.

**SNACKS**
• **Be prepared** - Buy healthy snack-sized foods and store them in your home & workplace for when you get hungry. Good ideas include baked beans, tuna, tinned corn, low fat cheese sticks, rice crackers, corn thins, fresh or tinned fruit, pretzels, sultanas, yoghurt, cereal bars, instant soups, raw nuts & carrot/celery sticks with low fat dip.

**FLUIDS**
• **Water is best** – Your body needs at least 6 to 8 glasses of water every day, to maintain your alertness, concentration and decision making abilities. You need even more than this if you are active or if you work in air-conditioning.
• **Always keep water with you** - Keep a bottle of water on your desk at work; in the car; and in your carry bags. This will help remind you to continue sipping throughout the day.
• **Avoid too much caffeine** – Aim for no more than 400mg of caffeine (i.e. 2-4 cups of coffee) per day.

### 4 Physical Activity - Staying Motivated

Making any change in behaviour, such as starting a physical activity program, is significant and can be challenging – the next thing is to make it a habit. Motivation levels fluctuate in everyone; even exercise fanatics find it hard to get motivated from time to time. So before you start, accept that there will be brief setbacks or times when you do not feel like exercising. If this occurs, remind yourself that this is not failure – it’s simply life getting in the way. Be ready for these 'slips'. Think about some strategies to overcome those hurdles and how you can pick up where you left off. Don’t be discouraged. It happens to all of us. Remember, always consult with your doctor before beginning any new exercise program, particularly if you are overweight, over 40 years of age, haven’t exercised in a long time or have a chronic medical condition.

**Start off right**

Suggestions include:
• Pick an activity (or range of activities) that appeals to you. Also choose activities that you are confident you can manage physically, and that suit your lifestyle and your income. For example, if you don’t like jogging or have previously failed at sustaining a jogging program, chances are you won’t keep it up. Likewise, an expensive sport like golf or waterskiing may not be practicable.
• Choose an activity that is close to home or work. You may find yourself skipping sessions if
it is not a convenient distance.

- Set realistic goals. For example rather than aiming for a set amount of weight loss, aim for four activity sessions per week.
- We all have different motivations to exercise. Think about your personal fitness goals to help you on those days when you don’t feel like lacing up your sneakers.
- Remember also that research indicates you don’t need to lose weight to gain significant health benefits.
- Start small. Aim to just include more general activity into your day, working toward a continuous bout of exercise for about 10 minutes per day at first, and gradually work your way up to 30 minutes or more.
- Find a friend or family member to be active with. Motivate and reward each other and enjoy the process together.
- This is obviously important to you or you would not have taken the steps to change your behaviour, so make exercise a priority in your life.
- Make the commitment. Put ‘exercise appointments’ in your diary, at least for the first few weeks until exercise becomes a habit.

**Don’t think about it too much**

It’s probably best not to think about it too much – just go ahead and do it! If you think too much about the pros and cons of exercising, you may well talk yourself out of it. Just do it. Book dates in your diary and stick to them.

**Monitor your progress**

It’s easier to stick to an exercise routine if you can see the benefits. Suggestions include:

- Keep a training diary. Pay attention to the way you feel. Was yesterday’s gardening session easier on your back? Are your jeans looser? Were you able to laugh off an irritating event today? Simply taking the time to recognise these little improvements to your daily quality of life can increase your motivation to exercise.
- Reward yourself whenever you reach a fitness goal – for example, your aim is to walk every night after work and you’ve achieved your goal. Rewards could range from a magazine membership to a manicure. The point is to celebrate your achievements in any way that is meaningful to you.

**Avoid boredom**

Suggestions include:

- Choose from a range of physical activities.
- If you feel bored by an exercise routine, try something new or challenge yourself. Try to walk a bit faster on your 30-minute walk. Or choose a different route.
- Set new fitness goals.
- Find a training partner or join a group activity. The enthusiasm of others and the sense of camaraderie can buoy you along.
- Purchase new equipment or a new workout outfit.

**Common pitfalls**

Most of us find it difficult to resume regular exercise following a significant break. Suggestions on how to overcome disruptions to your exercise routine include:

- Illness – once you feel a little better, opt for a gentle exercise routine. For example, take
a 10-minute stroll around the neighbourhood instead of jogging for an hour.
- Injury – you will need to set new goals for the short term. Make recovery, not exercise, your first priority. Gentle exercise like walking, stretching or swimming may be possible. Be guided by your doctor or physiotherapist about how you can keep fit while recovering.
- Holiday – take advantage of local facilities. For example, some hotels have swimming pools, tennis courts or gyms. If you’re holidaying at the beach, take a daily swim. Tour on foot – walking is one of the best ways to see the sights and is a great aerobic and weight bearing exercise.
- Business commitments – exercise at your desk. Perform stretches. Take a break from your desk and walk the stairs every now and then.
- Bad weather – adapt your routine. Exercise indoors – head to your local swimming pool or gym.

**Be flexible**
Remember that unexpected events will arise from time to time and disrupt your exercise routine. Think about ways to cope with interruptions. Suggestions include:
- Don’t let this interruption worry you, but make a date in your diary for your next available exercise session.
- If your day is packed with events, consider getting up 30 minutes earlier to exercise.
- Keep ‘at home’ exercise options accessible – for example, exercise videotapes or a stationary bike.
- Look for opportunities in your everyday routine – for example, walk instead of drive to the train station, take the stairs instead of the elevator or take a walk at lunchtime.
- Appreciate that a short break may be a good thing. Remember, even professional athletes schedule regular periods of ‘down time’. This may be important if you participate in rigorous activities such as weight training.
- Not in the mood? Remember that activity improves people's moods. It not only relieves stress but also helps fight sadness and depression. Push yourself to get up and get moving, even if you're in a bad mood.

**Where to get help**
Things to remember
- Always consult with your doctor before starting any new exercise routine, particularly if you are overweight, over 40 years, haven’t exercised in a long time or have a chronic medical condition.
- People who manage to maintain a regular exercise program don’t intellectualise about it – they just go ahead and do it.
- Keep a training diary to help you spot every little improvement you make.

### 5 Changing Your Habits: Steps to Better Health

#### 5.1 Contemplation

Making the leap from thinking about change to taking action can be hard. Asking yourself about the pros (benefits) and cons (things that get in the way) of changing your habits may be helpful. Look at the lists below. Check off the items that you believe are true for you. Feel free to add others that you think are important. How would life be better if you made some changes? Think about how the benefits of physical activity or healthy eating might relate to your personal life. For example, suppose your blood sugar is a bit high and you have a brother, parent, or sister who has type 2 diabetes. This means you may develop type 2 diabetes, too. You may find that it is easier to work out and eat healthy knowing that it may help you control your blood sugar and protect you from this serious health problem.
You can learn more about the benefits of changing your eating and activity habits from your health care provider. This knowledge may help you to take action.

5.2 Preparations

If you are in the preparation stage, you are about to take action. To get started, look at your list of pros and cons. How can you make a plan and move to action? The chart below lists the types of barriers and solutions you may face as you begin to change your habits. Think about these things as you make your plan.

<table>
<thead>
<tr>
<th>BARRIER</th>
<th>SOLUTION</th>
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<tr>
<td>&quot;I don't have time.&quot;</td>
<td>Make your new healthy habit a priority. Whenever you can, fit in physical activity. Try taking the stairs or getting off the bus a stop early, if it is safe to do so. Set aside one grocery shopping day a week, and make healthy meals that you can freeze and eat later when you do not have time to cook.</td>
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<td>&quot;Healthy habits cost too much.&quot;</td>
<td>Start a walking group. Walk around the mall during off-peak hours, find a school track, or go to a local park. Eat healthy on a budget by buying in bulk and choosing frozen or canned fruits and vegetables. The Weight-control Information Network (WIN) publications listed at the end of this fact sheet offer more ideas.</td>
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<td>&quot;I can't make this change alone.&quot;</td>
<td>Recruit others to be active with you. That will help you stay interested and be safe. Also, consider signing up for a fun exercise class, like salsa dancing. Get your family or coworkers on the healthy eating bandwagon. Plan healthy meals together with your family, or start a healthy potluck once a week at work.</td>
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<tr>
<td>&quot;I don't like physical activity.&quot;</td>
<td>Forget the old notion that being physically active means lifting weights in a gym. You can be active in many ways, including dancing, walking, gardening, or taking fun fitness classes. Make your own list of options that appeal to you. Explore options you never thought about, and stick with what you enjoy.</td>
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<td>&quot;I don't like healthy foods.&quot;</td>
<td>Try making your old favorite recipes in healthier new ways. For example, you can trim fat from meats, and reduce the amount of butter, sugar, and salt you cook with. Use low-fat cheese or milk rather than whole-milk foods. Add a cup or two of broccoli, carrots, or spinach to casseroles or pasta. For sources where you can find more ideas, see the Resources section of this fact sheet.</td>
</tr>
<tr>
<td>&quot;I don't know enough about healthy habits.&quot;</td>
<td>Talk to your health care provider, a fitness professional, or a registered dietitian to learn more. You do not have to be an expert to change your habits. A few tips and ideas can do wonders. Check the WIN Facebook page for healthy tips and resources: <a href="http://www.facebook.com/win.niddk.nih.gov">http://www.facebook.com/win.niddk.nih.gov</a>.</td>
</tr>
<tr>
<td>&quot;I'm not motivated.&quot;</td>
<td>Think about your most important reasons for being healthy. For example, do you want to be there for your family? Would you like to be able to do the things you love without feeling tired or out of breath? Would you like to stop worrying about your health risks? Think about these things when you want to quit. Also, try different activities or try exercising in new places to stay interested.</td>
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5.3 Action

You are making real changes to your lifestyle, which is fantastic. To stick with your habits, it is helpful to look at how you are doing, overcome your setbacks, and reward yourself for your hard work. Track your progress through a physical activity log or healthy eating journal. This can help you identify your strengths, spot areas where you can improve, and stay on course. You need to record not only what you did, but how you felt while doing it—your feelings can play a role in your habits. See “Ideas for Staying on Track with Healthy Habits” for ideas about how to track your progress.

TRACK YOUR PROGRESS

- Review your plan and keep an activity journal or food diary to track your progress.
- Write down your progress. This can be one of your most important tools for staying on a healthy path. Recording progress serves as a good reminder, helps to keep you focused, and helps you catch slip-ups.
- Keep a journal. It’s a great way to measure how close you are to reaching your goals.

OVERCOME YOUR BARRIERS.

Ask a friend or family member for help when you need it and always try to plan ahead. For example, if you know that you will not have time to be physically active after work, go walking with a co-worker at lunch or start your day with an exercise DVD. If you tend to snack mindlessly while the TV is on, prepare a cup of hot tea to sip instead.

REWARD YOURSELF!

- Set rewards and right after you exercise, treat yourself to something you enjoy. Ideas include a relaxing shower, a fruit smoothie, a phone call to a friend, or new workout gear.
- Choose rewards carefully. While you should be proud of your progress, keep in mind that a high-calorie treat or a day off from your exercise routine are not the best rewards to keep you healthy.
- Pat yourself on the back. If negative thoughts creep in, remind yourself how much good you are doing for your health by moving more and eating better.

6 Managing Hunger, Metabolism & Muscle

Research on protein in recent years has shown what many people in the fitness industry have believed for a long time: higher protein intake helps support lean bodies. From the standpoint of physical conditioning, protein helps improve satiety, increases overall calorie expenditure, and supports lean-body-mass maintenance. It has also been shown to help support recovery from exercise and improve bone density. Many studies have shown a significant difference in weight loss success when consuming a higher amount of protein during a calorie-restricted diet. In fact, as caloric intake decreases, the requirement for protein increases.

6.1 Increased Satiety

Protein tends to reduce the glycaemic effect of carbohydrates. That means if blood sugar levels rise at a slower rate, they will also fall at a slower rate, which can lengthen the time before hunger returns. It may also reduce cravings for more carbohydrates. This is the most likely reason higher protein intake enhances weight loss — improved satiety. Protein takes longer to digest than carbohydrates or fat. By ensuring each meal contains a reasonable serving of protein, hunger may take longer to return. It may
be that increased protein leads people to eat fewer overall calories because they are more satisfied from their meals.

**6.2 Increased Thermic Effect of Food**

Another possible way protein can aid in weight management is by increasing the total number of calories the body burns each day. The digestion of protein requires more work from the body than the digestion of carbohydrates or fat. The thermic effect of food refers to the calories the body must burn to digest the food we eat. Protein digestion can cause the body to burn three to four times as many calories during digestion as carbohydrates or fat, calories being equal. One study showed that a higher protein diet can result in an extra 90 or more calories burned each day. Burning an extra 90 calories a day may not seem significant compared to an average 2,000-calorie diet, but every extra calorie may help to decrease body fat levels, all else being equal in the metabolism. Theoretically, burning an extra 90 calories a day could result in a 9-pound reduction in body fat over the span of a year. Of course, that assumes all other variables in weight management remain the same, which is rarely the case.

**6.3 Maintenance of Lean Body Mass**

Because protein helps us maintain our lean body mass, it’s critical for enhancing our body composition — our body fat to lean body mass ratio. The importance of protein for maintaining muscle mass is particularly important as we age. Older Americans generally do not eat enough protein to keep sarcopenia (the loss of muscle mass) in check, and controversy exists on whether older men and women should consume more than the adult RDA for protein. As people lose weight, they often also lose lean body mass (muscle and bone). It’s not possible to prevent all losses of lean body mass for those who have high amounts of weight to lose, but additional protein intake can help individuals maintain optimal levels of lean body mass. Those who focus on calories alone and neglect sufficient protein intake can find themselves at a lower body weight but with higher body fat percentages. In the end, when people are looking to “tone up” or “get more defined,” it’s critical to eat enough protein. Animal proteins such as beef, eggs, poultry, fish and dairy products provide all of the necessary amino acids, the building blocks of protein for our bodies.

**7 Suggestions for Health & Lifestyle Factors**

A life of substandard nutrition, pollutant exposure, or other negative lifestyle factors can disrupt metabolic and hormone functions. In these cases, it may be necessary to look beyond food alone. If you feel you’ve been diligent about diet but are still struggling with weight management, a logical next step might be examining other factors. If you’re in the early stages of changing — or contemplating changing — your diet, you’ll likely find that certain lifestyle choices like reining in stress or getting more sleep will complement your dietary efforts. The following are brief descriptions of how alternative factors may impact weight management.

**Sleep**

The truth is, we know we tend to make poorer food choices when we skimp on sleep at night. We’re more susceptible to cravings. We use unhealthy foods to get beyond the continual fatigue we experience throughout the day. There’s physiological reason for these tendencies. Inadequate sleep...
raises ghrelin, a hunger-stimulating hormone. Likewise, it decreases leptin, a hormone that helps us regulate our energy and food intake. It also decreases our insulin sensitivity, which can set us up for diabetes over time. Finally, new research also shows that insufficient sleep promotes the expression of obesity-related genes. Although individuals’ needs for sleep vary, try to get at least seven if not eight full hours of quality sleep each night.

**Stress**

Stress comes from many triggers: job, family, finances, physical injury, sickness and more. Lack of sleep can increase levels of stress, and the cycle continues. Stress also impacts the food choices we make. The most common hormone related to stress is cortisol. If cortisol levels are high because of regular stress, we can be prone to overeating and have cravings for sugary foods. The body increases its fat storage, particularly around the organs in the abdominal area, where it puts us most at risk for health issues. Chronic stress can also lead to high blood pressure as well as elevated cholesterol and blood sugar. Understanding where stress is coming from and then dealing with it in a constructive manner is critical to health and weight management.

**Toxins**

Environmental toxins, including those we’re exposed to within our food supply, may play more of a role in the obesity epidemic than we have ever realized. Government, health and consumer agencies have begun investigating environmental pollutants and their effect on our health. Chemicals we’re exposed to every day-like flame retardants, BPA, and other endocrine-disrupting toxins, have been shown to increase our risk for obesity and even cancer. Pollutants may disrupt our hormones, alter our metabolism, and block the absorption of important nutrients. Exposure to toxins in our food, water and environments should be minimized, although it’s difficult to completely avoid them. Understanding where you come in contact with these pollutants can allow you to make informed choices. A well-structured detox program may be beneficial as well. If this is of interest, talk to a Health and Fitness Professional about the Life Time Detox program.

**Extreme Nutrient Deficiency**

Years or even decades of a poor diet can result in extreme nutrient deficiencies that may require more customized supplementation and close monitoring by a physician. If you have a history of serious medical conditions, disordered eating, or even long-term medication use, consider testing for nutritional deficiencies. Nutrients don’t operate independently in our bodies, but interact systemically to influence all of our major health functions.

**Hormonal Balance**

Testosterone, estrogen, progesterone, thyroid and other hormones all play important roles in our ability to achieve optimal health and maintain weight. If an individual’s hormone levels are out of balance, certain diet and exercise recommendations can help promote more normalized hormone levels. In many instances, however, diet and exercise may not be enough. It’s important to consult an experienced medical professional. He or she will request and monitor the appropriate tests as well as prescribe any additional treatment options that might be necessary. Oftentimes, women are more likely to seek support for hormone balance, but men should not dismiss it. In fact, a recent study showed that as many as 25 percent of men over 30 have low levels of testosterone. Because hormone levels play such an important role in maintaining health, it’s recommended that you have levels checked on an annual basis.
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References


