QATAR NATIONAL PHYSICAL ACTIVITY GUIDELINES

2nd EDITION

THE STATE OF QATAR
2021

ASPETAR سبيتار

Aspetar. Qatar National Physical Activity Guidelines,
2nd ed. Aspetar Orthopaedic and Sports Medicine Hospital; Doha, Qatar: 2021.

QATAR
NATIONAL PHYSICAL ACTIVITY
GUIDELINES

SECOND EDITION

"Your Body has a Right Over You."

Prophet Muhammad
PBUH

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April 2021

ASPETAR سبيتار

Message From The Director General

The field of physical activity and public health has developed markedly in the State of Qatar where Aspetar, a member of Aspire Zone Foundation, has been taking the leading role in promoting active healthy living and wellness of the people in Qatar. This commitment encourages greater participation across the country and supports the development of human capital in line with Qatar National Vision 2030.

Aspetar is proud to release the second version of Qatar National Physical Activity Guidelines that build on and significantly expand the scientific evidence summarized in the first version published in 2014. The guidelines provide science-based advice on how physical activity can help promote health and reduce the risk of chronic life style-associated diseases.

It is important to emphasize that this work could not have been completed without the outstanding support of our stakeholders and the experts from national and international organizations. We are very grateful for their substantial assistance throughout the entire process of developing these national physical activity guidelines.
Thanks and gratitude extended to Aspetar's staff who have made this mission done, and for providing high standards of services towards excellence in sport medicine and exercise science.

Mr. Mohammed Khalifa Al-Suwaidi
Director General of Aspetar
Chief Executive Officer of Aspire Zone Foundation

Message From The Chief Executive Officer

Aspetar is proud to develop Qatar National Physical Activity Guidelines to reflect new scientific information and its translation into opportunities for improved health.
Updating the science for physical activity, physical fitness, and sedentary behavior across the lifespan is essential for providing the most recent evidence-based recommendations for the Qatari population, specifically highlighting the importance of moving more to improve health and well-being.

We are excited that the scientific working group has covered a wide span of areas such as physical activity for selected populations including young children and pregnant women, sedentary behavior, physical activity for patients with chronic lifestyle disorders, and exercise recommendations in special conditions such as in challenging environments of heat and pollution, fasting, outbreaks, and more.

This new edition of the physical activity guidelines for Qatar has the potential to assure active healthy living through the provision of information that helps educate people in Qatar to make healthy choices for themselves and their families. In addition, it is an essential resource for health professionals and policymakers to design and implement physical activity programs, policies, and promotion initiatives in all the places where people live, learn, work, and play.

Dr. Abdulaziz Jaham Al-Kuwari
Chief Executive Officer of Aspetar

Foreword

This second edition of Qatar National Physical Activity Guidelines (QNPAG) is written as a practical guideline reference and not necessarily as a scientific resource. It outlines the most updated knowledge and best practices regarding physical activity as it relates to health. The intention of this content is to be an immediate and easy resource of information for practitioners, physicians, educators, and individuals who wish to prescribe or engage in regular physical activity.

There are four main chapters which target the benefits of physical activity as well as the hazards of sedentary behavior for: 1) healthy adults, 2) people with chronic diseases, 3) children and adolescents, and 4) persons with special physical challenges or disability related to physical activity. It is essential to realize that when addressing personal and population behavior modification, it cannot be considered independently from cultural norms, local sensibilities, and environmental factors. Hence, in this second edition of the QNPAG, social and environmental factors that are unique to Qatar are being addressed.

In this guideline update, every effort has been made to provide the most relevant and current concepts available. Beginning with a foundation on the highest quality of evidence available, followed by a thorough assessment and rationale of local and regional needs; and concluding with efficient and targeted goal setting which target outcomes and relapse prevention. A group of sport medicine scientists, epidemiologists, public health experts, health promotion specialists, health care professionals, physicians from Qatar, and global consultants contributed to the review and update of these guidelines.

Each one of the major chapters focuses on brief description of the target group followed by a formatted exercise prescription (Frequency, Intensity, Type and Time) that is based on the best available evidence reliably established by research. Examples of physical activity are provided that meet the guidelines, emphasize the benefit of being active, discourage sedentary behavior, as well as provide the most important safety tips to assure the participant accomplishes the benefits of exercise safely while minimizing the risk of complication or injury.

Ultimately, implementing this updated guideline of QNPAG will lead to increased health benefits for all Qatari citizens and residents. Implementation of the QNPAG as a guiding reference to both motivate and help the individual and the population will lead to more physically-active lives which will translate into improved personal health and less societal health care burden. All health care practitioners in Qatar are encouraged to keep the QNPAG ever-present in the office and shared with patients at every visit and every appropriate opportunity. Recognition of the benefits of physical activity is a powerful and effective way to create change in both personal and societal behaviors regarding fitness and health. For further information, key references are listed at the end these guidelines.

QNPAG can be accessed at www.aspetar.com

Acknowledgments

Aspetar, as one of the subunits of Aspire Zone Foundation (AZF), would like to acknowledge the contributions made by various partners in reviewing and updating the National Physical Activity Guidelines for Qatar. Among the notable ones are the Ministry of Public Health, Qatar University, Naufar, Primary Health Care Corporation, Hamad Bin Khalifa University Press, and Hamad Medical Corporation for providing the experts to support the development of these guidelines.

Thanks and appreciations are also extended to all team members of the Steering Committee, Technical Advisory Group, and External Experts for sharing their knowledge and experience that added value to the development of this second version of the Qatar National Physical Activity Guidelines. Their valuable input ensured that the guidelines are matched with the latest scientific evidence and tailored towards meeting the various needs of the population of Qatar to adopt active healthy living.

Appreciation and gratefulness are extended to Aspetar's higher management for their full support to this project and of their contribution to promote physical activity and health in the State of Qatar.

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Table of Contents

CHAPTER ONE: Introduction

1.1. **Evidence, Rationale and Need** 16
1.2. **First Do No Harm** 17
1.3. **Goal Setting and Relapse Prevention** 18
1.4. **The General Principles of Exercise Prescription** 19
1.5. **Where To Exercise In Qatar** 20

CHAPTER TWO: HEALTHY POPULATION-SPECIFIC GUIDELINES

2.1. **Physical Activity for Healthy Adults** 34
A. Healthy Adults (18-64 Years)
B. Healthy Senior Adults (65+ Years)

2.2. **Physical Activity for Healthy Children and Adolescents** 38
A. Healthy Children Under 5 Years
B. Healthy Children And Adolescents (5-17 Years)

CHAPTER THREE: Physical Activity For People With Medical Conditions

3.1. **Physical Activity for Adults With Medical Conditions** 42
A. Obesity
B. Diabetes
C. Hypertension
D. Asthma
E. Chronic Obstructive Pulmonary Disease
F. Heart Diseases
G. Osteoarthritis
H. Osteoporosis
I. Cancer
J. Disabilities

3.2. **Physical Activity for Children With Medical Conditions** 59
A. Overweight And Obese Children And Adolescents
B. Children And Adolescents With Type 1 Diabetes
C. Children And Adolescents With Respiratory Disorders
D. Children And Adolescents With Mental Health Disorders
E. Children And Adolescents With Down's Syndrome

CHAPTER FOUR: Physical Activity for Special Challenging Conditions

4.1. **Environment (Heat, Humidity, Air Pollution)** 68
4.2. **Fasting (For Adults)** 69
4.3. **Maternal Conditions** 70
A. Preconception And Pregnancy
B. Postpartum

4.4. **Exercise During Outbreaks, Pandemics, And Quarantine** 73
4.5. **Substance Use** 75

CHAPTER FIVE: References, Glossary and Appendices

5.1 **References** 78
5.2 **Glossary** 80
5.3 **Appendices** 82

APPENDIX A: PAR-Q+ 82
APPENDIX B: Rate Of Perceived Exertion 86
APPENDIX C: Aerobic Exercises 87
APPENDIX D: Compound Exercises 88
APPENDIX E: Isolation Exercises 91
APPENDIX F: Stretches For Major Muscle Groups 92
APPENDIX G: Balance Exercises 94

CHAPTER ONE
INTRODUCTION

1.1. Evidence, Rationale and Need

Strong evidence confirms the health benefits of an active lifestyle. The recommended level of physical activity (PA) for adults (aged between 18–64 years) is to accumulate at least 30 minutes of moderately intense PA for five days a week. However, studies show that 31% of the world's population do not achieve sufficient PA. Approximately 6 – 10% of major non-communicable diseases (NCDs) worldwide are attributable to physical inactivity. The World Health Organization classified physical inactivity as the fourth leading risk factor for global mortality. It causes an estimated 3.2 million deaths yearly. Studies show that sedentary behavior is a significant contributing risk factors for many of the most prevalent acute and chronic diseases. Those with high levels of sedentary time may have an increased relative risk of diabetes (112%), cardiovascular events (147%), cardiovascular mortality (90%), and all-cause mortality (49%). There is also a wealth of experimental evidence showing that regularly breaking up prolonged sitting with short, light-to-moderate-intensity physical activity improves cardiovascular disease risk markers in a range of population groups including those who are healthy, overweight, obese and have type 2 diabetes.

Evidence to support the inverse relationship between a physically active lifestyle and the incidence of cardiovascular disease, hypertension, stroke, osteoporosis, type 2 diabetes, obesity, colon cancer, breast cancer, anxiety and depression is indisputable. The evidence supporting the positive effect of exercise on the quality of life is very strong. A meta-analysis of 23 cohorts, representing over 1.2 million people with 4-23 years of follow-up, showed a negative dose-response relationship between PA and the risks of cardiovascular disease. It is well established that additional volumes of PA or an increased physical fitness level provide added health benefits.

In the State of Qatar, more than 50% of the population do not engage in regular PA. High prevalence of physical inactivity in the country, along with other factors, has contributed to a rise in obesity and was found to be the highest among Arab gulf countries. Alarmingly, 75% of Qataris are classified as overweight, out of which 40% are considered obese or morbidly obese. Consequently, health complications have escalated and lifestyle-related diseases are now one of the leading causes of mortality among the population of Qatar.

Qatar National Health Strategy (NHS) was developed to promote PA and healthy food habits among the community. Exercise is Medicine (EIM) department at Aspetar Hospital developed PA and health initiatives that fall under the strategy of Aspire Zone Foundation (AZF). Various community-based programs, such as the Step-Into-Health program were established including organized PA and sport activities, group interventions, community education and research for society, to promote PA and sport culture.

Annual Statistic Reports in Qatar showed that deaths attributable to NCDs collectively ranked as the number one cause of death in the last 10 years. According to the International Diabetes Foundation (2012), Qatar ranks as the world's 8th highest nation in the prevalence of diabetes. The National STEPS Survey (NSS) examined the health and behaviour of 2,496 adults in Qatar. The results were alarming and revealed that:

- **41.4%** of the respondents were **obese**.
- **21.9%** of the respondents had **high blood choles terol** levels.
- **16.7%** of the respondents had **diabetes mellitus.**
- **63.3%** of the population between 18 - 64 years old reported no participation in **recreational PA.**
- **86.2%** of the women between 45- 65 years old reported no participation in any form of **vigorous PA.**

The Global School-Based Student Health Survey (GSHS), conducted in 32 schools in Qatar interviewed 2,021 students in grades 7, 8, and 9. The survey showed that only 15% of the students reported being physically active for a total of 60 minutes or more on 5 or more days per week.

Qatar is a sports-loving nation and a number of well designed sport facilities were established. However, still the minimal PA needs were not met, and the evidence about what helps people incorporate PA into their lives is not clear. On the other hand; effective strategies and policies have taken place in settings as diverse as physical education classes in schools, health promotion programs at worksites, and one-on-one counseling by health care providers including behavior modification programs. However, more needs to be learned about what helps individuals change their PA habits and how changes in community environments, policies, and social norms might support that process.

Research evidence suggests that patients counseled by their physicians to participate in PA are more likely to exercise. Unfortunately, only very few patients reported that their physician informed them about the benefits of regular PA.

Therefore, the main purpose of this QNPAG is to encourage and help Qataris and residents lead more physically active lifestyles and to enlist the support of all health care providers in monitoring and prescribing more daily PA for their patients.

Economic Benefits

The logical assumption has always been that employees who are more physically active in their place of employment incur lower medical costs, exhibit less absenteeism, reduce disability expense, and are generally more productive. This assumption is supported by research that reports benefit/cost ratio ranging from 0.76 to 3.43, meaning that the return rate can be as high as three times the investment in the physical fitness of the employees. Inactivity greatly contributes to medical costs. As an example, in the USA and Canada, the total economic costs of physical inactivity and obesity represent 2.6% and 2.2% of the total health care costs, respectively. Therefore, investing in the health of employees makes economic sense as well.

The Challenge: Changing the Ethos

Changing the nation's attitude and behavior towards

PA will require a multipronged, long-term approach that involves every sector of our society. In Qatar, this is a national priority. Building athletic and recreational facilities is a good start, but this alone will not result in a physically active population. Nor will dis-articulated efforts by the various health entities lead to a new culture where PA is an accepted, expected, and practiced way of life. Lessons learned from nations with a successful record in preventive health management clearly show that all the players must come together to create a strong and sustained effort to change the ethos towards our health and fitness as a nation including behavior change strategies. This effort will involve the health sector, educators, sport and exercise experts, policy makers, Ministry of Education, the food industry, the health insurance industry, urban planners and real-estate developers, employers and a direct referral mechanism from healthcare providers to community assets such as commercial and community health clubs. When these players work in tandem and in a sustained fashion, we will create a permanent cultural ethos towards PA that will sustain itself for generations to come.

1.2. First Do No Harm

Generally, exercise does not cause untoward events in healthy individuals with no known acute or chronic disease. When exercise is performed according to established guidelines, the risk of sudden cardiac complications or heart attack is very low in healthy individuals performing low to moderate-intensity activities. There is an increased risk of sudden cardiac death and/or heart attack in individuals performing vigorous exercise with either diagnosed or undetected underlying cardiovascular disease. It is therefore incumbent on the person who wishes to engage in moderate to high intensity PA to rule-out such conditions if exercise is to be conducted in clinically unsupervised settings. In clinically diagnosed individuals, carefully prescribed exercise must be conducted under the supervision of trained specialists until medical clearance for unsupervised exercise is given.

The risk of sudden cardiac death in individuals less than 35 years of age is very low due to the low prevalence of cardiovascular disease in this population, with the most common causes of death in young individuals being congenital and hereditary abnormalities. The absolute risk of non-traumatic exercise related death among high school and college athletes is one per 133,000 men and one per 769,000 women.

Studies on injuries from exercise show that the major factors in determining the risk of injuries are physical condition, age, training intensity, and impact of the activity. Exercise duration can also increase the risk of musculoskeletal and heat-related injuries. For example, the incidence of orthopedic injuries more than twice when comparing 45-min versus 30-min exercise sessions. With appropriate conditioning and gradual increase in exercise duration and intensity, most injuries can be avoided. For some individuals, the risks associated with a high intensity PA program outweigh its potential benefits. In such cases, it is important to seek medical advice before engaging in high intensity exercise. A pre-exercise test evaluation in the clinical setting generally includes a medical history, physical examination, laboratory tests, and eventually a submaximal or maximal graded exercise test. These evaluations provide valuable information that help in individualizing the exercise prescription (ExRx) and also assessing the efficacy of the training program.

Exercise and Physical Activity Benefits

The effect of regular exercise on the human body is well recognized. Over the past two decades, much research has been conducted to provide strong evidence on the effects of regular PA on physical, mental and social health and wellbeing. The body of evidence collected has proven unequivocally that regular PA can:

- Improve general well-being and quality of life
- Improve insulin sensitivity and blood sugar control (patients on oral medication or insulin may be able to reduce the dose)
- Reduce blood pressure, regulate blood lipids and reduce the risk of heart attack and stroke
- Reduce joint pain and improve joint range of motion
- Improve muscle strength
- Improve postural control and walking ability, also reducing the risk of falling
- Promote weight loss and improve body composition
- Maintain mental health, preserve cognitive function and lower stress levels
- Improve both sleep duration and quality

Are You Ready for Physical Activity? Your First Step is to Self-Screen.

There are several self-administered instruments to screen your physical readiness for engaging in PA. The QNPAG recommends using the Physical Activity Readiness-Questionnaire (PAR-Q) (Appendix A) for its ease of use and high sensitivity. The PAR-Q is a pre physical activity screening tool. It should be completed before starting a moderate-to-vigorous PA program. If you answer 'yes' to one or more questions on the form, you should seek clearance from a physician before starting a physical activity program.

1.3. Goal Setting and Relapse Prevention

To succeed in improving your health, it is important to understand that becoming healthier is a process. It takes time, it happens progressively, and there are bound to be lapses along the way. Excluding infectious diseases and acute illnesses, we do not become "healthy" or "unhealthy" overnight, and shortcuts to health (e.g. very fast weight loss) will usually fail.

Goal Setting

Realistic goal setting is a critical part of behavior modification. Unrealistic goal setting (e.g. to lose 10 Kg of fat mass within three weeks) ultimately leads to failure. This negative experience reinforces one's aversion to the healthy behavior making it tougher to face the same attempt in the future. It is far better to establish both short-term and long-term goals. Short-term goals should be measurable and obtainable. For example, if the long-term goal is to lose 10 Kg of body weight, a short-term goal might be to lose 1 Kg per week for 10 weeks.

SMART, An Effective Way To Set Realistic Goals

Specific	Make sure your goals are focused and identify a tangible outcome. With out the specifics, your goal runs the risk of being too vague to achieve. Being more specific helps you identify what you want to achieve. You should also identify what resources you are go ing to leverage to achieve success.
Measurable	You should have some clear definition of success. This will help you to evaluate achievement and also progress. This component oft en answers how much or how many and highlights how you'll know you achieved your goal.
Attainable	Your goal should be challenging, but still reasonable to achieve. Reflecting on this component can reveal any potential barriers that you may need to overcome to realize success. Outline the steps yo u're planning to take to achieve your goal.
Relevant	This is about getting real with yo urself and ensuring what you're trying to achieve is worth while to you. Determining if this is aligned to your values and if it is a priority focus for you. This helps you answer the why.
Time-Bound	Every goal needs a target date, something that motivates you to really apply the focus and discipline necessary to achieve it. This answers when. It's important to set a realistic time frame to achieve your goal to ensure you don't get discouraged.

No matter how many times you lapse, you can still reach your goal as long as you do not give up (collapse).

It is possible to experience numerous lapses on the way to reaching goals, in general, as well as, specific health goals. The key is to continue in this endeavor and not take it as a reason to stop. If physical activity is part of the goal setting, relapse is defined as a decrease in physical activity levels after noticing a temporary improvement in physical activity.

Relapse Prevention

1) Accept responsibility
2) Examine the context
3) Rehearse new actions

Relapse prevention is a self-management technique to improve behavior modification by predicting future lapses (slips) and developing coping strategies to better manage high-risk situations. Relapse prevention is based on the understanding that lapses are natural and are to be expected. If you are willing to learn from your mistakes, lapses become useful because they can help you develop tools to avoid bad behavior in the future.

Relapse prevention encompasses identifying situations in which you are more likely to lapse and developing coping skills that will help you overcome these situations when encountered again. Relapse prevention consists of:

1) Accepting responsibility for actions and decisions that led to lapse
2) Examining the context in which the lapse took place
3) Examining alternative actions, you could use should you find yourself in the same situation again. You can improve your chances of success dramatically by learning more about relapse prevention.

1.4. The General Principles of Exercise Prescription

The scientific principles for a safe and effective exercise program presented in the QNPAG are intended to assist in the development of an individually tailored exercise prescription. These principles are based on the application of scientific evidence and include all health-related components of physical fitness. For more information about indicated (safe) and contraindicated (unsafe) exercises, see Appendix B for a Rating of Perceived Exertion Scale (RPE).

In this chapter the general components of an exercise prescription (ExRx) are presented. Chapters Two and Three will cover population and condition-specific modifications to the general exercise prescription. The QNPAG provides recommendations for basic activity (i.e. minimal or maintenance) as well as aerobic activity (optimal).

Components of an Exercise Prescription for Enhancing Aerobic and Muscular Fitness

Warm Up	This phase consists of a minimum of 10-5 minutes of low-to-moderate intensity cardiovascular (aerobic) and muscular endurance activity designed to increase body temperature. The purpose of a good warm-up is to slowly increase heart rate to the prescribed exercise intensity. The warm-up phase improves the mechanical efficiency of the circulatory system by decreasing the viscosity of joint fluids and inducing vasodilation of muscle vessels, making it easier for the heart to pump blood throughout the body.
Pre-Exercise Stretching	This phase should focus on range of motion exercises that targets the joints preferentially used in the conditioning phase of the ExRx. For example, if swimming is the exercise mode, range of motion exercises for the shoulder, neck, and hip should be included.
Conditioning (stimulus phase)	The components of the conditioning phase can be best described and memorized using the FITT principle, an acronym that stands for Frequency, Intensity, Time, and Type of exercise. • **F**requency (how often should I exercise?) • **I**ntensity (how hard should I exercise?) • **T**ime (how long should I exercise?) • **T**ype (what mode of exercise is best?) The QNPAG provides specific recommendations based on the above principles for a range of individual profiles, such as healthy adults, obesity and pregnancy.
Rate of Progression	The recommended rate of progression in an exercise program depends on the individual's health status, exercise tolerance, and exercise program goals. Progression may consist of increasing one or several of the components of the FITT framework.

1.5. Where to Exercise in Qatar

Regular physical activity offers substantial improvement in health and well-being. Governments play an important role in creating environments and opportunities for physical activity and active living. These opportunities are not limited to sports and organized recreation; they exist everywhere – workplace, home, neighborhood as well as educational and health organizations. However, the built environment, (i.e. streets layout, recreational facilities location, parks, transportation system, etc.) can encourage physical activity. Evidence shows that individuals are more active when they have easy access to parks, safe exercise areas, and safe areas to walk.

Aspire Park

Olympic Cycling Track

AlBayt Stadium park

Qatar recognizes the importance of physical activity and the fact that sport is an important pillar of the Qatar National Vision 2030. The country is a leading leisure sport destination, with people of community guaranteed specially-tailored venues that will be worthy to stay fit and active all year long. The below list shows some of the various public venues for physical activity which are accessible by individuals based on municipality location, in addition to available indoor venues:

MUNICIPALITIES OF QATAR

Walking and Cycling Routes

	Location	Municipality	Activities
Al Corniche Steet	Doha	Doha	Accessible, Walking, Running, Cycling
Al Khor Corniche	Al Khor	Al Khor	Accessible, Walking, Running, Cycling
Al Khor East Walk Route	Al Khor	Al Khor	Walking, Running, Cycling
Al Refaa Street	Al Khurityat	Umm Salal	Accessible, Walking, Running, Cycling
Al Thakhira Walking Routes	Al Thakhira	Al Khot	Walking, Running, Cycling
Aspire – Sports City	A Waab	Rayyan	Accessible, Walking, Running, Cycling
Doha Festival City Cycling Track	Umm Salal	Umm Salal	Walking, Running, Cycling
Duhail Cycling Course	Duhail	Daayen	Cycling
Dukhan Hiking Trails	Dukhan	Shahaniyah	Walking, Hiking
Hamad International Airport Road	Doha	Doha	Cycling
Jebal Fuwairit Cycling Trials	Al Fuwairit	Al Shamal	Cycling
Lusail International Race Circuit	Lusail	Daayen	Accessible, Walking, Running, Cycling, Skateboard, Boxing
Lusail Marina Walkway	Lusail	Daayen	Accessible, Walking, Running, Cycling
Olympic Cycling Track	Doha/ Al Khor	Doha/ Al Khor	Cycling
Shahaniya Cycling Path	Al Shahaniyah	Shahaniyah	Cycling
The Pearl Walk/ Cycling Routes	The Pearl	Doha	Walking, Running, Cycling
Zekreet Hiking Trails	Al Shahaniyah	Shahaniyah	Walking, Running,Hiking

Public Beaches

	Location	Municipality	Activities
Al Adaid Public Beach	Al Adaid	Wakrah	Walking, Running, Cycling, Swimming, Sailing
Al Khor Beach	Al Khor	Al Khor	Walking, Running, Swimming, Beach Activities, Volleyball, Sailing
Al Farkiah Beach for families	Al Khor	Al Khor	Walking, Running, Swimming, Beach activities
Al Ghariyah Swimming Beach	Al Ghariyah	Al Shamal	Walking, Running, Cycling, Swimming, Sailing
Al Kharayij Public Beach	Al Kharayij	Rayyan	Walking, Running, Cycling, Swimming, Sailing
Al Ruwais Public Beach	Al Ruwais	Al Shamal	Walking, Running, Cycling, Swimming, Sailing
Al Safliya Island	Safliya Island	Doha	Beach Activities, Swimmimg, Volleyball
Al Thakira Beach for families	Al Thakira	Al Khor	Walking, Running, Cycling, Swimming, Sailing
Al Wakrah Public Beach	Al Wakrah	Wakrah	Cycling, Swimming, Volleyball, Football, Physical Exercises
Al Wakrah Beach for families	Al Wakrah	Wakrah	Cycling, Swimming, Volleyball, Football, Physical Exercises
Abu Az Zuluf Beach for families	Abu Az Zuluf	Al Shamal	Walking, Running, Cycling, Swimming, Sailing
Doha Corniche Beach	Doha	Doha	Accessible, Walking, Running, Physical Exercises, Flyboard, Jetski, Kayak, Sailing
Dukhan Public Beach	Dukhan	Shahaniyah	Walking, Running, Cycling, Swimming, Sailing
Fuwaryrit Public Beach	Fuwaryit	Al Shamal	Walking, Running, Cycling, Swimming, Sailing
Inland Sea	Al Wakrah	Wakrah	Walking, Running, Swimming, Scuba Diving
Katara Beach	West Bay	Doha	Walking, Running, Physical Exercises, Flyboard, Jetski, Kayak, Hydrobikes, Sailing
Pearl Beach	West Bay	Doha	Walking, Running, Cycling, Swimming, Volleyball, Physical Exercises, Sailing
Sealine Public Beach	Al Wakrah	Wakrah	Walking, Running, Cycling, Swimming, Volleyball, Physical Exercises, Sailing
Sealine Beach for families	Al Wakrah	Wakrah	Walking, Running, Cycling, Swimming, Volleyball, Physical Exercises, Sailing
Samisma Public Beach	Samisma	Daayen	Walking, Running, Cycling, Swimming, Volleyball, Physical Exercises, Sailing
Samisma Beach for ladies	Samisma	Daayen	Walking, Running, Cycling, Swimming, Volleyball, Physical Exercises, Sailing
Umm Bab Beach	Al Shahaniyah	Shahaniyah	Walking, Running, Cycling, Swimming, Sailing
Zekreet Beach	Al Shahaniyah	Shahaniyah	Walking, Running, Cycling, Swimming, Sailing

Sports Clubs and Centers

	Location	Municipality	Activities
Al Ahli Sports Club	Doha	Doha	Walking, Football, Volleyball, Basketball,Swimming, Handball, Table Tennis, Physical Execises
Al Arabi Sports Club	Doha	Doha	Walking, Football, Volleyball, Basketball,Swimming, Handball, Table Tennis, Physical Execises
Al Aziziya Youth Center	Al Saad	Doha	Sports Programs, Football, Volleyball, Basketball , Handball, Table Tennis, Physical Execises
Al Daayen Youth Center	Simaisma	Daayen	Sports Programs, Football, Volleyball, Basketball , Handball, Table Tennis, Physical Execises
Al Dana Girls Center	New Salatah	Doha	Sports Programs
Al Duhail Sports Club	Duhail	Doha	Walking, Football, Volleyball, Basketball,Swimming, Handball, Table Tennis, Physical Execises
Al Gharafa Sports Club	Al Gharafa	Rayyan	Walking, Football, Volleyball, Basketball,Swimming, Handball, Table Tennis, Physical Execises
Al Kaaban Youth Center	Al Kaaban	Al Khor	Sports Programs, Football, Volleyball, Basketball , Handball, Table Tennis, Physical Execises
Al Kharaitiyat Sports Club	Al Kharaitiyat	Umm Salal	Walking, Football, Volleyball, Basketball,Swimming, Handball, Table Tennis, Physical Execises
Al Khor Girls Center	Al Khor	Al Khor	Sports Programs
Al Khor Sports Club	Al Khor	Al Khor	Walking, Football, Volleyball, Basketball,Swimming, Handball, Table Tennis, Physical Execises
Al Majd Girls Center	Al Ruwais	Al Shamal	Sports Programs
Al Markhiya Sports Club	Al Markhiya	Doha	Walking, Football, Volleyball, Basketball,Swimming, Handball, Table Tennis, Physical Execises
Al Rayyan Sports Club	Al Rayyan	Rayyan	Walking, Football, Volleyball, Basketball,Swimming, Handball, Table Tennis, Physical Execises
Al Reyada Girls Center	Wadi Menay	Rayyan	Sports Programs
Al Sadd Sports Club	Al Sadd	Doha	Walking, Football, Volleyball, Basketball,Swimming, Handball, Table Tennis, Physical Execises
Al Sailiya Sports Club	Al Sailiya	Rayyan	Walking, Football, Volleyball, Basketball,Swimming, Handball, Table Tennis, Physical Execises
Al Shahania Sports Club	Al Shahaniyah	Shahaniyah	Walking, Football, Volleyball, Basketball,Swimming, Handball, Table Tennis, Physical Execises
Al Shaqab Horse Racing Academy	Al Rayyan	Rayyan	Accessible, Horse Riding
Al Thakhira Youth Center	Al Thakhira	Al Khor	Sports Programs, Football, Volleyball, Basketball , Handball, Table Tennis, Physical Execises
Al Wakrah Girls Center	Al Wakrah	Wakrah	Sports Programs
Al Wakrah Sports Club	Al Wakrah	Wakrah	Walking, Football, Volleyball, Basketball,Swimming, Handball, Table Tennis, Physical Execises
Al Wakrah Youth Center	Al Wakrah	Wakrah	Sports Programs, Football, Volleyball, Basketball , Handball, Table Tennis, Physical Execises
Aspire Dome	Al Waab	Rayyan	Accessible, Walking, Running, Football, Physical Execises
Barzan Girls Center	Umm Salal Ali	Umm Salal	Sports Programs

Barzan Youth Center	Umm Salal Ali	Umm Salal	Sports Programs, Football, Volleyball, Basketball , Handball, Table Tennis, Physical Execises
Doha Girls Center	Doha	Doha	Sports Programs
Doha Golf Club	West Bay	Doha	Physical Exercises, Golf
Doha Marine Sports Club	Doha	Doha	Jetski, Sailing, Beach Activities
Doha Youth Center	Doha	Doha	Sports Programs, Football, Volleyball, Basketball , Handball, Table Tennis, Physical Execises
Hamad Aquatic Center	Al Waab	Rayyan	Swimming, Water Activties
Jumayliyah Youth Center	Al Jumayliyah	Shahaniya	Sports Programs, Football, Volleyball, Basketball , Handball, Table Tennis, Physical Execises
Khalifa International Tennis and Squash Complex	Doha	Doha	Tennis, Squash
Lusail Shooting Club	Lusail	Daayen	Accessible, Shooting
Mesaimeer Sports Club	Doha	Doha	Walking, Football, Volleyball, Basketball,Swimming, Handball, Table Tennis, Physical Execises
Muaither Sports Club	Al Rayyan	Rayyan	Walking, Football, Volleyball, Basketball,Swimming, Handball, Table Tennis, Physical Execises
Qatar Paralympic Committee	Doha	Doha	Accessible, Sports Programs
Qatar Sports Club	Doha	Doha	Walking, Football, Volleyball, Basketball,Swimming, Handball, Table Tennis, Physical Execises
Qatar Sports For All Federation	Doha	Doha	Sports Programs
Qatar Volleyball Association	New Slata	Doha	Volleyball
Simaisma Youth Center	Simaisma	Daayen	Sports Programs, Football, Volleyball, Basketball , Handball, Table Tennis, Physical Execises
The Center of Empowerment and Elderly Care – Ehsan	Doha	Doha	Accessible, Walking
Umm Salal Sports Club	Umm Salal Ali	Umm Salal	Walking, Football, Volleyball, Basketball,Swimming, Handball, Table Tennis, Physical Execises

Al Furjan Playgrounds

	Location	Municipality	Activities
Ain Khaild Fereej Playground	Ain Khalid	Rayyan	Walking, Running, Football
Al Asiri Fereej Playground	New Slata	Doha	Walking, Running, Football
Al Aziziya Fereej Playground	Al Rayyan	Rayyan	Walking, Running, Football
Al Khor Fereej Playground	Al Khor	Al Khor	Walking, Running, Football
Al Markhiyah Fereej Playground	Doha	Doha	Walking, Running, Football
Al Thakhira Fereej Playground	Al Thakhira	Al Khor	Walking, Running, Football
Al Thumama Fereej Playground	Al Thumama	Rayyan	Walking, Running, Football
Al Wakair Fereej Playground	Al Waakair	Wakarah	Walking, Running, Football
Al Wakarah Fereej Playground	Al Wakarah	Wakarah	Walking, Running, Football
East Naija Fereej Playground	Naija	Doha	Walking, Running, Football
Madinat Khalifa Fereej Playground	Madinat Khalifa	Doha	Walking, Running, Football
North Duhail Fereej Playground	Duhail	Doha	Walking, Running, Football
South Duhail Fereej Playground	Duhail	Doha	Walking, Running, Football
West Naija Fereej Playground	Naija	Doha	Walking, Running, Football
Umm Salal Ali Fereej Playground	Umm Salal Ali	Umm Salal	Walking, Running, Football

Public Parks

	Location	Municipality	Activities
Abu Dhalouf Park	Al Shamal	Al Shamal	Walking, Running, Children's Play Area
Abu Hamour Park	Abu Hamour	Rayyan	Children's Play Area
Abu Sedra Park	Al Rayyan	Rayyan	Football, Children's Play Area
Ain Khalid Park	Ain Khalid	Rayyan	Football, Children's Play Area
Ain Senan Park	Al Shamal	Al Shamal	Walking, Running, Children's Play Area
Al Abraj Park	Doha	Doha	Accessible, Walking, Running
Al Azizyah Park	Azizya	Rayyan	Football, Children's Play Area
Al Bayt Stadium Park	Al Khor	Al Khor	Accessible, Walking, Running, Cycling, Physical Exercises
Al Bidda Park	Al Dafna	Doha	Accessible, Walking, Running, Cycling, Physical Exercises
Al Corniche	Doha Corniche	Doha	Accessible, Walking, Running, Physical Exercises, Jetski, Kayak, Hydrobikes
Al Ebb West Park	Al Khurityat	Daayen	Children's Play Area
Al Garya Park	Madinat Khalifa	Doha	Walking, Running, Children's Play Area
Al Ghanim Al Qadeem Park	Doha	Doha	Walking, Running, Children's Play Area
Al Gharrafa Park	Al Gharrafa	Rayyan	Children's Play Area
Al Gharrafah Plaza Park	Al Rayyan	Rayyan	Children's Play Area
Al Ghasham Park	Al Wakrah	Wakrah	Football, Children's Play Area
Al Hala Park	Al Wakrah	Wakrah	Foorball, Children's Play Area
Al Hitmi Park	Doha	Doha	Walking, Running, Children's Play Area
Al Huwaila Park	Madinat Khalifa	Doha	Basketball, Physical Exercises, Children's Play Area
Al Janoub Stadium Park – Al Wakrah	Al Wakrah	Wakrah	Accessible, Walking, Running, Cycling, Physical Exercises
Al Jaw Park	Al Wakrah	Wakrah	Walking, Running, Children's Play Area
Al Jebailat Park	Doha	Doha	Walking, Running, Football, Children's Play Area
Al Jelattah	Al Khor	Al Khor	Football, Children's Play Area
Al Kabaan City Park	Al Kabaan	Al Khor	Football, Basketball, Children's Play Area
Al Khor Park	Al Khor	Al Khor	Accessible, Football, Basketball, Children's Play Area
Al Khor Plaza Park	Al Khor	Al Khor	Walking, Running, Cycling
Al Khulaifat Park	Doha	Doha	Walking, Running, Children's Play Area
Al Khurityat Family Park	Al Khurityat	Umm Salal	Walking, Running, Football, Basketball, Children's Play Area
Al Khurityat Plaza Park	Al Khurityat	Umm Salal	Walking, Running, Children's Play Area
Al Luqta Park for women & kids	Al Luqta	Doha	Accessible, Football, Basketball, Children's Play Area
Al Maamoura Park	Doha	Doha	Walking, Running, Basketball, Children's Play Area
Al Manaseer Park	Al Rayyan	Rayyan	Football, Children's Play Area
Al Marona Park	Madinat Khalifa	Doha	Football

Al Nuaija East Park	Doha	Doha	Walking, Running, Football, Children's Play Area
Al Nuaija Family Park	Doha	Doha	Walking, Running, Children's Play Area
Al Qarma Beach Garden	Al Khor	Al Khor	Football, Basketball, Children's Play Area
Al Rayyan Family Park	Al Rayyan	Rayyan	Accessible, Children's Play Area
Al Rayyan Park – Green Carpet Garden	Al Rayyan	Rayyan	Walking, Running, Cycling, Football
Al Rayyan Park 11	Al Rayyan	Rayyan	Children's Play Area
Al Rayyan Park 4	Al Rayyan	Rayyan	Football, Children's Play Area
Al Ruwais Park	Al Ruwais	Al Shamal	Children's Play Area
Al Sayliyah Park	Al Sayliyah	Rayyan	Children's Play Area
Al Sayliyah Park – Abu Nakhla	Al Sayliya	Rayyan	Physical Exercises, Football, Basketball, Children's Play Area
Al Shahaniyah Park	Al Shahaniyah	Shahaniyah	Walking, Running , Football, Basketball, Children's Play Area
Al Shamal City Park	Al Shamal	Al Shamal	Walking, Running, Children's Play Area
Al Shuaa Reserve Garden	Al Khor	Al Khor	Walking, Children's Play Area
Al Soudan Park	Al Rayyan	Rayyan	Football, Children's Play Area
Al Sultan Beach and Park	Al Khor	Al Khor	Walking, Children's Play Area
Al Tawasul Traditional Park	Al Khor	Al Khor	Walking, Children's Play Area
Al Thakhira Park	Al Thakhira	Al Khor	Physical Exercises, Children's Play Area
Al Thumama Park	Al Thumama	Doha	Walking, Running, Football, Children's Play Area
Al Thumama South Park	Al Thumama	Doha	Walking, Running, Football, Children's Play Area
Al Waab Park	Al Waab	Rayyan	Football, Children's Play Area
Al Wakrah Park	Al Wakrah	Wakrah	Children's Play Area
Al Wakrah Public Park	Al Wakrah	Wakrah	Walking, Beach Activities, Swimming, Water Activities, Children's Play Area
Al Yusufiya Family Park	Madinat Khalifa	Doha	Walking, Running, Children's Play Area
Ali Bin Jassim Park	Umm Salal Ali	Umm Salal	Children's Play Area
Aspire Park	Al Waab	Rayyan	Walking, Running, Cycling, Physical Exercises
Barzan Olympic Park	Umm Salal Ali	Umm Salal	Accessible, Walking, Running, Children's Play Area
Busamra Park	Doha	Doha	Walking, Running, Children's Play Area
Ceremonial Court	Al Rayyan	Rayyan	Walking
Crescent Park	Lusail	Daayen	Accessible, Walking, Running, Children's Play Area
Dahl Al Hamam Park	Doha	Doha	Accessible, Walking, Cycling, Football, Physical Exerices, Children's Play Area
Freej Al Ali East Park	Doha	Doha	Walking, Running, Football, Children's Play Area
Freej Al Ali Park	Doha	Doha	Walking, Running, Children's Play Area
Freej Al Ali West Park	Doha	Doha	Walking, Running, Football, Children's Play Area
Green Spine Park	Al Rayyan	Rayyan	Skateboard, Skating, Physical Exercises
Hazam Al Markhiya Park	Doha	Doha	Walking, Running, Children's Play Area
Izghawa Family Park	Al Rayyan	Rayyan	Volleyball, Basketball, Children's Play Area
Jeryan Najaima Park	Doha	Doha	Walking, Running, Children's Play Area
Jumayliyah Park	Al Jumayliyah	Shahaniyah	Walking, Running, Children's Play Area
Kahramaa Awareness Park	Al Garadi St	Doha	Accessible, Walking, Running, Children's Play Area
Katara Green Hills	West Bay	Doha	Accessible, Walking, Running, Cycling
Khulaifat Park	Doha Corniche	Doha	Physical Exercises
Kulaib Park	Doha	Doha	Walking, Running, Children's Play Area
Laqtifia Park/ Park 66	Madinat Khalifa	Doha	Accessible, Walking, Running, Football, Basketball, Children's Play Area
Leabaib Park	Leabaib	Daayen	Walking, Running, Cycling, Physical Exercises
Lowaina Park	Al Wakrah	Wakrah	Children's Play Area
West Al Ubb Park	Al Ubb	Daayen	Children's Play Area
Madinat Khalifa North Family Park	Madinat Khalifa	Doha	Walking, Running, Football, Children's Play Area

Madinat Khalifa Park	Madinat Khalifa	Doha	Walking, Running, Children's Play Area
MIA Park – Museum of Islamic Art	Doha Corniche	Doha	Accessible, Walking, Running
Mohammad Bin Jassim Park	Umm Salal	Umm Salal	Walking, Running, Children's Play Area
Mroob Park	Madinat Khalifa	Doha	Walking, Running, Football
Muaither Family Park	Al Rayyan	Rayyan	Walking, Running, Children's Play Area
Muaither Park 2	Al Rayyan	Rayyan	Children's Play Area
Muglina Unit Park	Doha	Doha	Walking, Running, Children's Play Area
NMoQ Park	Doha	Doha	Walking, Running, Cycling, Physical Exercises, Water Sports, Children's Play Area
Nasser Bin Abdulla Al-Atyah Park	Al Khurityat	Umm Salal	Walking, Running, Children's Play Area
New Al Rayyan Park 2	Al Rayyan	Rayyan	Football, Children's Play Area
New Salata Park	Doha	Doha	Walking, Running, Children's Play Area
North Sidra Farm	Al Shamal	Al Shamal	Physical Exercises
Nuaija Family Park – South	Doha	Doha	Walking, Running, Children's Play Area
Onaiza Park	Doha	Doha	Walking, Running, Children's Play Area
Oxygen Park	Al Rayyan	Rayyan	Accessible, Walking, Running, Cycling, Physical Exercises
Park 65	Doha	Doha	Football, Basketball, Children's Play Area
Park 67	Madinat Khalifa	Doha	Walking, Running, Football, Basketball, Children's Play Area
Sahat Al Monasabat Park	Al Khurityat	Umm Salal	Walking, Running, Children's Play Area
Samisma Park	Samisma	Daayen	Football, Basketball, Children's Play Area
Sheraton Park	Doha	Doha	Accessible, Walking, Running, Cycling, Physical Exercises
Um Al Houl Power Head Office Park	Doha	Doha	Physical Exercises
Umm Lekhaba Park	Doha	Doha	Walking, Running, Children's Play Area
West Bay Park	Doha	Doha	Walking, Running, Football, Basketball, Children's Play Area
6/5 Park	Onaiza	Doha	Walking, Running, Cycling, Children's Play Area

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الاتحاد القطري
QSFA
للرياضة للجميع


Al Jaw Park


Al Maamoura Park


Al Qarma Beach Garden


West Bay Park


North Sidra Farm


Oxygen Park


wattbike


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CHAPTER TWO
HEALTHY POPULATION-SPECIFIC GUIDELINES

2.1 Physical Activity for Healthy Adults

Healthy Adults (18-64 years)

Regular PA can help to achieve significant health benefits and can reduce the risk of developing chronic diseases. The below recommendations can be considered as long-term goals for the inactive healthy population. It is important to understand that the greatest health benefits take place when individuals who are entirely physically inactive become somewhat more active. Any additional physical activity is positively linked to health benefits. Every step counts - physical activity promotes health independent from the duration of an individual session. The following recommendations are relevant to all healthy adults aged from 18 to 64 years, irrespective of gender, race, ethnicity or income level.

	Aerobic Exercise Program	Resistance Exercise Program
Frequency	≥ 5 days per week (moderate) or ≥ 3 days per week (vigorous) or 3-5 days per week (combination of both)	≥ 2 days/week (non-consecutive days)
Intensity	Moderate or Vigorous or Combination of both	Moderate = 60-70% 1 Repetition Maximum (1RM) Vigorous = Equal or greater than 80% 1 RM *moderate to vigorous for novice and intermediate
Time	≥ 30 minutes (moderate) or ≥ 20 minutes (vigorous) or 20 - 30 minutes (combination of both)	8-12 Reps per set of exercise 1-2 Set(s) of each exercise Moderate speed movements (6 seconds per repetition) 2-3 Minutes rest between sets
Type	Cardiovascular endurance activities that involve large muscle groups**	8-10 Compound exercises that target all of the major muscle groups**

**40-50% may be beneficial for sedentary individuals (very light to light)*
*** See Appendix C and Appendix D*

Flexibility Exercises (stretching Exercises)

1. Adults should do flexibility exercises at least two or three days each week to improve range of motion.
2. Each stretch should be held for 10-30 seconds to the point of tightness or slight discomfort.
3. Repeat each stretch 2-4 times (accumulating 60 seconds per flexibility exercise).
4. Types of flexibility exercises: static stretching in major muscle groups (Appendix E).

Examples of Physical Activities

1. Daily brisk walking (walking to mosque, mall/ park walking, Nordic walking).
2. Jogging.
3. Indoor and outdoor cycling.
4. Swimming, stand-up paddle boarding or kayaking.
5. Team sports (football, volleyball and handball).

Special Benefits

1. Physical activity lowers the risk of lifestyle-related chronic diseases (high blood pressure, cardiovascular disease, diabetes, and cancer).
2. Physical activity improves skeletal muscle mass, strength, and bone mineral density, while it reduces osteoporosis risk.
3. Physical activity boosts energy, improves mental well-being, quality of life, and cognitive function. It is associated with a lower risk of cognitive decline and dementia.

Safety Tips

1. Safety should be assured. Patients need to complete the Physical Activity Readiness-Questionnaire (PAR-Q) before starting any physical activity (moderate or vigorous-intensity) (Appendix A).
2. Build up gradually to the recommended level of physical activity. Start by adjusting the physical activity duration before you increase the frequency and intensity. This can reduce the risks of musculoskeletal injury and adverse cardiac events.
3. If you join exercise classes, make sure activities are adequate for your level of fitness.
4. Drinking fluids during exercise is essential to keep the body well-hydrated and maintain physical and mental performance.
5. Wearing proper sport clothes and shoes can help protect against common injuries associated with the type of workout and environmental conditions.

Sedentary Behavior (Sitting)

1. It is recommended to reduce the total amount of time spent sitting during waking hours and to also take regular breaks (e.g. every 20-30 minutes) from sitting.
2. Make physical activity a daily habit to reduce your sitting time (using stairs, active commuting, standing meetings and phone calls, parking car further away).
3. Take regular activity breaks from looking at a screen (standing, walking, bodyweight resistance exercises such as lunges, knee raises, squats).

Healthy Senior Adults (65+ years)

The following recommendations are relevant to all healthy older adults aged 65 years and above, irrespective of gender, race, ethnicity or income level.

	Aerobic Exercise Program	Resistance Exercise Program
Frequency	≥ 5 days per week (moderate) or ≥ 3 days per week (vigorous) or 3-5 days per week (combination of both)	≥ 2 days/week *with at least 48 hours rest for same muscle groups
Intensity	Moderate or Vigorous or Combination of both	Light = 40-50% 1 RM Moderate = 60-70% 1 RM
Time	≥ 30 minutes (moderate) or ≥ 20 minutes (vigorous) or 20-30 minutes (combination of both)	8-12 Reps per set of exercise 1-2 Set of each exercise Moderate speed movements (6 seconds per repetition) 2-3 Minutes rest between sets
Type	Cardiovascular endurance activities that involve large muscle groups	8-10 Compound exercises that target all of the major muscle groups

Flexibility Exercises *(Stretching Exercises)*

1. Senior adults should do flexibility exercises at least two or three days each week to improve range of motion.
2. Each stretch should be held for 10-30 seconds to the point of tightness or slight discomfort.
3. Repeat each stretch 2-4 times (accumulating 60 seconds per flexibility exercise).
4. Types of flexibility exercises: static stretching in major muscle groups (Appendix E).

Balance Exercises

Senior adults are at risk of falls and should incorporate balance exercises as part of their exercise plan at least two days per week. Balance exercises will also improve older adults' coordination skills.
Exercise Examples: Single Limb Stance, Walking Heel to Toe, Back Leg Raises, etc.
(Appendix F).

Examples of Physical Activities

1. Daily brisk walking (walking to mosque, mall walking, Nordic walking).
2. Jogging.
3. Indoor or outdoor cycling.
4. Water aerobics or swimming.

Special Benefits

1. Physical activity improves quality of life and is associated with lower risk of cognitive decline and dementia. It assures mental well-being and better physical health.
2. Physical activity boosts energy.
3. Physical activity maintains muscle strength and preserves bone density.
4. Active healthy living helps keep an independent lifestyle, reduces the risk of falls and bone fractures, and dissolves blood clots.

Safety Tips

1. Always be safe and complete the Physical Activity Readiness-Questionnaire (PAR-Q) before starting moderate or vigorous physical activity (Appendix A).
2. Build up gradually to the recommended level of physical activity. Start by adjusting the exercise duration before you increase the frequency and intensity. This can reduce the risks of musculoskeletal injury and adverse cardiac events.
3. If you join exercise classes, make sure activities are adequate for your level of fitness.
4. Drinking fluids during exercise is essential for you to remain hydrated and maintain your physical and mental performance.
5. Wearing proper sport outfit and shoes can help to protect you against common injuries associated with your type of workout.

Sedentary Behavior (Sitting)

1. It is recommended to reduce the total amount of time spent sitting during waking hours and to also take regular breaks (e.g. every 20-30 minutes) from sitting.
2. Make physical activity a daily habit to reduce your sitting time (using stairs, active commuting, standing meetings and phone calls, parking car further away).
3. Take regular activity breaks from looking at a screen (standing, walking, bodyweight resistance exercises such as lunges, knee raises, squats).

2.2 Physical Activity for Healthy Children and Adolescents

These physical activity guidelines are for healthy infants, toddlers and preschoolers. If the child suffers from any medical condition, please visit the physician and other health care providers in order to tailor physical activity guidelines and recommendations.

Healthy Children Under 5 Years

Childhood is an important stage of life during which lifestyle behaviors, such as physical activity, are formed. Active children tend to have active lifestyle in adulthood. Therefore, it is an ideal time to develop healthy physical activity behavior at a younger age.

	Infants (< 1 year)	Toddlers and Preschoolers (1- 4 year)
Frequency	Daily	
Intensity	A Mix of Intensities	
Time	No Fixed Time, Just Be Active	A minimum of 180 minutes/ day
Type	Unstructured supervised play	Unstructured and structured play

Examples of physical activities

For Infants:

1. Floor-based play.
2. Time spent by the baby lying on his stomach while moving his limbs (tummy time).
3. Reaching out and grabbing objects.
4. Crawling.

For Toddlers and Preschoolers:

5. Include a wider variety of physical activity options through active play.
6. When the child starts walking, encourage him/her to walk more, move around the house, and climb the stairs.
7. When the child is able to balance well, encourage him/her to take part in activities such as running, jumping, climbing, swimming, bouncing, catching, kicking etc.

Special Benefits

1. Develops locomotor and movement skills.
2. Develops strong bones and muscles.
3. Maintains a healthy weight.
4. Improves social and intellectual skills.
5. Establishes an active behavior.

Safety Tips

1. Activities should be based on physical maturity rather than chronological age to reduce the risk of injury.
2. Frequency, intensity and time should be progressed gradually as the child develops.
3. Use appropriate protective equipment (bicycle helmets, flotation devices, knee pad, shin guards, etc.).

Sedentary Behavior (Sitting)

1. It is recommended to reduce the total amount of time spent sitting during waking hours and to also take regular breaks (e.g. every 20-30 minutes) from sitting.
2. Reduce sedentary behavior during waking hours to support healthy growth and development.
3. Limit long periods of sitting, by moving more and integrating physical activity in the child's everyday routines.
4. Limit screen time (electronic games, computer and television) to less than an hour a day, for 2-4 years. Screen time is not advisable for children under 2.
5. Keep electronic equipment out of sight.

Healthy Children and Adolescents (5-17 Years)

These physical activity guidelines are for healthy children and youth. If the child has been diagnosed with any medical condition, please refer to the appropriate section in this document and discuss it with the child's health care providers.

	Aerobic Exercise Program	Resistance Exercise Program
Frequency	Daily	≥ 3 days/week
Intensity	Moderate to vigorous *Vigorous activities 3 days per week	Low to moderate
Time	60 minutes/day	
Type	Cardiovascular activities	Muscle strengthening activities

Examples of Physical Activities

1. Aerobic exercise:
    a. **Moderate intensity:** cycling, brisk walking, skating, recreational swimming, scooter riding, and playground activities.
    b. **Vigorous Intensity:** running, jogging, and sports such as basketball, football, handball, swimming and tennis.
2. Resistance Exercise:
    a. **Age 5-11:** tug- of- war, swinging on playground equipment, gymnastics, and climbing rope, tree, or wall.
    b. **Age 12-17:** Workout all major muscle groups. Refer to (Appendix F) for examples.
3. Integrate physical activity into the child everyday routines.
4. Expose children and youth to a variety of activities and let them select what they enjoy to participate in regularly.
5. Register children in extracurricular activities and encourage them by taking them to training sessions and providing support from the sidelines (i.e. sports club or school).
6. Provide opportunities to interact with children of own age.
7. Visit playgrounds, parks and beaches.

Special Benefits

1. Improves health and overall feeling of well-being.
2. Enhances cardiopulmonary and muscular fitness.
3. Improves coordination and motor skills.
4. Improves bone health and strength.
5. Maintains a healthy weight and body composition.
6. Improves concentration, intellectual and academic performance.
7. Develops self-confidence and social skills.
8. Establishes an active behavior.

Safety Tips

1. Activities should be based on physical maturity rather than chronological age to reduce the risk of injury.
2. Frequency, intensity and time should be progressed gradually as the child/youth develops.
3. Warm up and cool down to prevent injury.
4. Use appropriate protective equipment (bicycle helmets, flotation devices, knee pads, shin guards, etc.).
5. Appropriately prescribe and properly supervise the low to moderate intensity resistance training among preadolescence as they are at higher risk of injury.
6. If you engage coaches, make sure they are qualified to coach and supervise young individuals.

Sedentary Behavior (Sitting)

1. It is recommended to reduce the total amount of time spent sitting during waking hours and to also take regular breaks (e.g. every 20-30 minutes) from sitting.
2. Reduce sedentary time (sitting or lying down) while awake.
3. Limit screen time (electronic games, computer and television) to less than an hour a day, for 5-6 years old, and less than 2 hours a day for 7 years old and above.
4. Limit long periods of sitting, by moving more and integrating physical activity in the child's everyday routines.
5. Keep electronic equipment out of sight.

CHAPTER THREE

PHYSICAL ACTIVITY FOR PEOPLE WITH MEDICAL CONDITIONS

3.1. Physical Activity for Adults with Medical Conditions

Obesity

Obesity is defined as a body mass index (BMI) greater than or equal to 30 kg/m2, and/or waist circumference greater than 102 cm for men and greater than 88 cm for women. Obesity is associated with many non-communicable diseases such as type 2 diabetes, heart disease, high blood pressure, and/or stroke. Regular physical activity, along with healthy balanced diet, can help in weight reduction and improve general health, as well as prevent and control chronic diseases such as diabetes, cardiovascular, hypertension and some cancers.

	Aerobic Exercise Program	Resistance Exercise Program
Frequency	≥ 5 days per week (moderate) or ≥ 3 days per week (vigorous) or 3 - 5 days per week (combination of both)	≥ 2 days/week (non-consecutive days)
Intensity	Moderate to vigorous	Moderate 60-70% 1 RM
Time	45 – 60 minutes/day	8-12 Reps per set of exercise 1-2 Set(s) of each exercise Moderate speed movements (6 seconds per repetition) 2-3 Minutes rest between sets
Type	Rhythmic exercises using the major muscle groups.	8-10 Compound exercises that target all of the major muscle groups

Examples of Physical Activities

1. Select an aerobic exercise such as walking, swimming or cycling.
2. Resistance exercise using lighter weights, bands or body weight is encouraged.
3. Chest press, and/or shoulder press, triceps extension, biceps curl, pull down (upper back), lower back extension, quadriceps extension or leg press, leg curls (hamstring), and calf raise (Appendix D).
4. Use a fitness tracking device/ application to monitor fitness progress.

Special Benefits

1. Reduces the risk of type 2 diabetes and cardiovascular diseases.
2. Maintains and/or improve blood pressure, cholesterol, and blood sugar levels.
3. Assists in weight loss by reducing fat mass.
4. Builds strong muscles and bones.
5. Helps develop and maintain overall physical and mental well-being.

Safety Tips

1. Build exercise prescription for patients with comorbidities accordingly.
2. Perform low intensity aerobic activities. Increase duration and intensity of the exercises gradually as fitness level improves.
3. Prefer non-weight bearing than weight bearing activities to avoid stress on the knees and joints and increase the risk of injury.
4. Wear light clothing and proper sports shoes.
5. Take your precaution while exercising during high temperature to avoid heat exhaustion.
6. Keep hydrated by drinking fluids frequently before, during, and after exercise.
7. Stop if you experience chest-pain, shortness of breath or major muscle or joint pain.
8. Vigorous exercise is probably not appropriate for individuals with very high obesity (BMI ≥35) due to the increased risk of orthopedic injuries.

Weight Loss – Specific Recommendations

1. Exercise alone has little effect on weight loss with large inter-individual variability in the response.
2. Start with aerobic exercise and increase, then add resistance exercises. Combining both types of exercise will bring further benefits for your weight loss, and overall health and fitness.
3. Exercise with high-repetition, low-resistance circuit training two to three times a week, with balance and stretching exercises.
4. Resistance exercise can be done using lighter weights, bands or body weight, as well as push-ups, sit-ups, seated row, bench press, and/or shoulder press.
5. Exercise should be combined with dietary measures to reduce body fat. The following are tips that can help in weight loss:
   •Set a realistic weight loss goal; aim to lose 0.5 – 1 kg per week.
   •Follow a balanced healthy diet within the required needs.
   •Increase the daily intake of fiber-rich food and vegetables.
   •Reduce sitting times (such as sitting to use a computer or watch TV).
   •Seek a dietitian for better assessment and proper diet plan.
6. Sedentary individuals should build up to their physical activity targets over several weeks, starting with 10 to 20 minutes of physical activity every other day during the first week or two, to minimize potential muscle soreness and excessive fatigue.
7. Consult your physician/ dietitian about appropriate nutritional plans, do not rely on personal trainers.

Sedentary Behavior (Sitting)

1. It is recommended to reduce the total amount of time spent sitting during waking hours and to also take regular breaks (e.g. every 20-30 minutes) from sitting.
2. Make physical activity a daily habit to reduce your sitting time (using stairs, active commuting, standing meetings and phone calls, parking car further away).
3. Take regular activity breaks from looking at a screen (standing, walking, bodyweight resistance exercises such as lunges, knee raises, squats).

Diabetes

Diabetes is a chronic non-communicable disease that occurs due to either insufficient insulin production from the pancreas or disturbance in insulin utilization. The main lifestyle risk behaviors are physical inactivity, unhealthy diet and overweight that can be modified with physical activity and appropriate nutrition. Cardiovascular diseases, blindness, kidney failure, and lower limb amputation are potential complications in individuals with diabetes.

	Aerobic Exercise Program	Resistance Exercise Program
Frequency	3 – 5 days/ week (or more)	2 days/week (or more) (non-consecutive days)
Intensity	Light to Moderate	Moderate = 60-70% 1 RM
Time	30 – 60 minutes/day	8-12 Reps per set of exercise 1-2 Set(s) of each exercise Moderate speed movements (6 seconds per repetition) 2-3 Minutes rest between sets
Type	Rhythmic exercises using the major muscle groups.	8-10 Compound exercises that target all of the major muscle groups

Examples of Physical Activities

1. Select an aerobic exercise such as walking, swimming and cycling.
2. Resistance exercise can be done using lighter weights, bands or body weight.
3. Chest press, and/or shoulder press, triceps extension, biceps curl, pull down (upper back), lower back extension, quadriceps extension or leg press, leg curls (hamstring), and calf raise (Appendix D).
4. Use a fitness tracking device/ application to monitor fitness progress.

Special Benefits

1. Reduces cardiovascular mortality risks.
2. Enhances mitochondrial density, insulin sensitivity and oxidative enzymes.
3. Improves HbA1c triglycerides, blood pressure, and insulin resistance.
4. Increases muscle mass, strength, aerobic capacity and bone mineral density,
5. Boosts mental health and quality of life.
6. Resistance exercise can assist in reducing the risk of exercise-induced hypoglycemia in people with type 1 diabetes.
7. Balance and flexibility training is recommended 2–3 times weekly especially for older adults with diabetes.

Safety Tips

1. Medical clearance is not necessary for asymptomatic sedentary individuals before prescribing exercise.
2. Adult patients with diabetes who want to exercise at a vigorous intensity (higher than their current exercise) are recommended to obtain a pre-training examination from a health-care provider and may be referred for exercise stress testing.
3. A patient who would be considered at high risk for cardiovascular disease (e.g., with elevated blood cholesterol, smoking, with a strong family cardiovascular disease history, etc.) or other health complications from doing such activities need medical clearance too.
4. Progressive exercise training should be planned appropriately to minimize the risk of injury.
5. Individuals with peripheral neuropathy should wear proper footwear and examine their feet daily to check for an early abnormality of the skin.
6. Individuals with diabetes taking insulin and/or insulin secreting medication, need to be educated for the possibility of hypoglycemia during or after physical activity.
7. When both resistance and aerobic exercises are combined in one exercise session, starting first with the former minimizes hypoglycemia.
8. Nutritionist consultation is required especially for the patients on multiple diabetic medications taken before, during or after exercise.
9. Nocturnal intense exercise could increase the risk of hypoglycemia that may be avoided by reducing the basal insulin doses, intake of bedtime carb-snacks, and/or the use of continuous glucose monitoring.
10. Exercise-induced hyperglycemia is a possible risk mainly among patients with type 1 diabetes. It can be minimized by increasing insulin dose or reducing exercise intensity.
11. The rapid change from a lying to standing position needs to be avoided especially in older adults with autonomic neuropathy as they are particularly prone to postural hypotension.
12. Fast-acting carbohydrate to be considered, such as glucose tablets when exercising. This is to be used when signs and symptoms of hypoglycemia develop during exercise.
13. Diabetes identification is to be worn all the time and friend/family group training is recommended.
14. Consult your physician/dietitian about appropriate nutritional plans; do not rely on personal trainers.

When to Stop Exercise and Seek Medical Advice

1. Low blood sugar (hypoglycemia) , or the feeling of hunger pain, light hiddenness, sweating headache and dizziness.
2. High blood sugar (hyperglycemia) above 13 mmol/l (240 mg/dl), or feeling headache, polydipsia (excess thirsty) polyuria (excess urination), and acetone smell breathing.
3. Positive urine test for ketone bodies.
4. Severely ill individuals with signs and symptoms of flu or infection such as high fever.
5. Feeling of chest pain, and shortness of breath.
6. When stroke symptoms appear during exercise.

Sedentary Behavior (Sitting)

1. It is recommended to reduce the total amount of time spent sitting during waking hours and to also take regular breaks (e.g. every 20-30 minutes) from sitting.
2. Make physical activity a daily habit to reduce your sitting time (using stairs, active commuting, standing meetings and phone calls, parking car further away).
3. Take regular activity breaks from looking at a screen (standing, walking, bodyweight resistance exercises such as lunges, knee raises, squats).

Hypertension

Hypertension or high blood pressure is a clinical disorder characterized by blood pressure greater than 140/90 mmHg. It is one of the leading causes of death worldwide. If left untreated, hypertension can increase the risk of heart attacks, strokes, and peripheral arterial diseases. Blood pressure-lowering effect of physical activity has been repeatedly demonstrated in clinical trials. Both dynamic aerobic exercise and resistance training can significantly lower blood pressure.

	Aerobic Exercise Program	Resistance Exercise Program
Frequency	3 – 5 days/ week (or more)	2 - 3 days/week (non-consecutive days)
Intensity	Low to Moderate	Moderate = 60-70% 1 RM
Time	30 – 60 minutes/day	8-12 Reps per set of exercise 1-2 Set of each exercise Moderate speed movements (6 seconds per repetition) 2-3 Minutes rest between sets
Type	Rhythmic exercises using the major muscle groups	8-10 Compound exercises that target all of the major muscle groups

Examples of Physical Activities

1. Brisk walking, jogging, running, cycling, swimming and water aerobics.
2. Resistance exercise can be done using lighter weights, resistance bands, or body weight.
3. Chest press, and/or shoulder press, triceps extension, biceps curl, pull down (upper back), lower back extension, quadriceps extension or leg press, leg curls (hamstring), and calf raise (Appendix D).
4. Use a fitness tracking device/ application to monitor fitness progress.

Special Benefits

1. educes the chance of developing hypertension by 50%.
2. Lowers the risk of stroke by 27%.
3. Reduces the number of medicines taken to control blood pressure.

Safety Tips

1. Doctor consultation before starting an exercise program.
2. Build exercise prescription for patients with comorbidities.
3. Holding breath during resistance exercises should be avoided.
4. Prolonged cool down towards the end of exercise session for at least 10 minutes.
5. ß-blockers and diuretics may adversely affect thermoregulatory function and mask hypoglycemia in some individuals. Patients should be informed about the sign and symptoms of heat intolerance and hypoglycemia, and the precautions that should be taken to avoid these conditions.
6. Avoid static muscle contractions (e.g. holding a weight straight out in front or trying to push an immovable object) because they tend to increase blood pressure.
7. Patients are to be informed about the nature of cardiac prodromal symptoms, such as shortness of breath, dizziness, chest discomfort or palpitation and seek prompt medical care if such symptoms develop.
8. Use a pedometer or other fitness device/application to monitor patients progress, and work slowly towards a goal, for instance 10,000 steps per day.
9. Consult your physician/dietitian about appropriate nutritional plans, do not rely on personal trainers.

When to Stop Exercise

1. Blood pressure is equal to or more than 200/115 mmHg.
2. Blood pressure drops to 10 mmHg or more during exercise in reference to a known baseline level.

Sedentary Behavior (Sitting)

1. It is recommended to reduce the total amount of time spent sitting during waking hours and to also take regular breaks (e.g. every 20-30 minutes) from sitting.
2. Make physical activity a daily habit to reduce your sitting time (using stairs, active commuting, standing meetings and phone calls, parking car further away)
3. Take regular activity breaks from looking at a screen (standing, walking, bodyweight resistance exercises such as lunges, knee raises, squats)


SYS
DIA
PULSE
START
STOP

Asthma

Asthma is a chronic inflammatory disorder of the respiratory system that presents with episodic signs and symptoms, such as a cough, wheezing and shortness of breath.

	Aerobic Exercise Program	Resistance Exercise Program
Frequency	3 – 5 days/ week (or more)	2 - 3 days/week (non-consecutive days)
Intensity	Moderate to vigorous (Talk Test*)	Moderate = 60-70% 1 RM
Time	30 – 60 minutes/day	8-12 Reps per set of exercise 1-2 Set(s) of each exercise Moderate speed movements (6 seconds per repetition) 2-3 Minutes rest between sets
Type	Rhythmic exercises using the major muscle groups	8-10 Compound exercises that target all of the major muscle groups

Talk test: is a measurement of relative intensity. With moderate-intensity activity, you can talk but not sing during the activity. In case of vigorous-intensity activity, you will not be able to say more than a few words without pausing to take a breath.

Examples of Physical Activities

1. All types of exercises except scuba diving.
2. Select an aerobic exercise such as brisk walking, swimming and cycling.
3. Resistance exercise can be done using lighter weights, bands or body weight.
4. Chest press, and/or shoulder press, triceps extension, biceps curl, pull down (upper back), lower back extension, quadriceps extension or leg press, leg curls (hamstring), and calf raise (Appendix D).
5. Use a fitness tracking device/ application to monitor fitness progress.

Special Benefits

1. Enhances cardiopulmonary efficiency and exercise capacity (boost fitness).
2. Improves the quality of life and psychological status.
3. Minimizes inflammation in respiratory airways

Safety Tips

1. Medical consultation is needed when exercise-initiated and for medication-dose adjustment.
2. The gradual build-up of both the intensity and the time of exercise to reach the target with the least complication by an accredited exercise specialist.
3. Patient education for using diaphragmatic breathing and lip-pursing while exercising.
4. Exercise therapy is part of the management plan, so it is highly recommended to advise patients to continue their medication.
5. Abstain from holding breath when weight-lifting.
6. Try to prolong warm-up and cool-down, both for at least 10 minutes, before and after exercising.
7. Find the best alternatives for exercising in cold, dry and dusty weather.
8. Patients need to stay hydrated.
9. Exercise should be avoided when having asthma-exacerbation or poor controlled environment and when developing severe symptoms.
10. Avoid exercising in dusty environments.

Exercise-Induced Asthma:
It is a condition when the signs and symptoms of asthma are developed while the patient is performing exercise. For proper asthma management, patients need to take into consideration all the above safety tips as well as medication before exercise.

Sedentary Behavior (Sitting)

1. It is recommended to reduce the total amount of time spent sitting during waking hours and to also take regular breaks (e.g. every 20-30 minutes) from sitting.
2. Make physical activity a daily habit to reduce your sitting time (using stairs, active commuting, standing meetings and phone calls, parking car further away).
3. Take regular activity breaks from looking at a screen (standing, walking, bodyweight resistance exercises such as lunges, knee raises, squats).

Chronic Obstructive Pulmonary Disease

Chronic Obstructive Pulmonary Disease (COPD) is a disease that presents persistent signs and symptoms of airflow restrictions as a result of alveolar and/or airway disease. It is characterized by exacerbation when the symptoms are acutely worsening.

	Aerobic Exercise Program	Resistance Exercise Program
Frequency	3 – 5 days/ week (or more)	2 days/week (non-consecutive days)
Intensity	Moderate to vigorous (Talk test*)	Moderate = 60-70% 1 RM
Time	30 – 60 minutes/day	8-12 Reps per set of exercise 1-2 Set of each exercise Moderate speed movements (6 seconds per repetition) 2-3 Minutes rest between sets
Type	Rhythmic exercises using the major muscle groups	8-10 Compound exercises that target all of the major muscle groups

Talk test: is a measurement of relative intensity. With moderate-intensity activity, you can talk but not sing during the activity. In case of vigorous-intensity activity, you will not be able to say more than a few words without pausing to take a breath.

Examples of Physical Activities

1. Select an aerobic exercise such as walking, swimming and cycling.
2. Resistance exercise can be done using lighter weights, bands or body weight.
3. Chest press, and/or shoulder press, triceps extension, biceps curl, pull down (upper back), lower back extension, quadriceps extension or leg press, leg curls (hamstring), and calf raise (Appendix D).
4. Use a fitness tracking device/ application to monitor fitness progress.

Special Benefits

1. Enhances cardiopulmonary efficiency and exercise capacity (Boost fitness).
2. Improves the quality of life and psychological status.
3. Minimizes inflammation in respiratory airways.

Safety Tips

1. Medical consultation is needed when exercise-initiated and for medication-dose adjustment.
2. The gradual build-up of both the intensity and the time of exercise to reach the target with the least complication by an accredited exercise specialist.
3. Patient education for using diaphragmatic breathing and lip-pursing while exercising.
4. Exercise therapy is part of the management plan, so it is highly recommended to advise patients to continue their medication.
5. Patients to abstain from holding breath when weight-lifting.
6. Patients need to prolong warm-up and cool-down, for at least 10 minutes, before and after exercising.
7. Find the best alternatives for exercising in cold, dry and dusty weather.
8. Patients need to stay hydrated.
9. Inform patients to avoid exercise when having COPD-exacerbation or poor controlled environment, and when developing severe symptoms.

Sedentary Behavior (Sitting)

1. There is limited evidence on the benefits of reducing sitting time in people with COPD. Patients should be encouraged to build up their activity across the day and could achieve this by aiming to take regular breaks from sitting.
2. Make physical activity a daily habit to reduce your sitting time (using stairs, active commuting, standing meetings and phone calls, parking car further away).
3. Take regular activity breaks from looking at a screen (standing, walking, bodyweight resistance exercises such as lunges, knee raises, squats).

Heart Diseases

Heart disease refers to various types of conditions that can affect heart function.
This guideline provides exercise prescription to adult patients who suffer from certain types of heart disease including:

- Blood vessel diseases such as coronary artery disease (atherosclerosis)
- Valvular heart disease
- Ischemic heart disease and chronic heart failure
- Heart rhythm disturbance (arrhythmias)

Other conditions such as congenital heart disease and cardiomyopathies are not within the scope of these guidelines.

	Aerobic Exercise Program	Resistance Exercise Program
Frequency	3 – 5 days/ week (or more)	2 days/week (non-consecutive days)
Intensity	Moderate to vigorous (Talk test*)	Moderate = 60-70% 1 RM
Time	30 – 60 minutes/day	8-12 Reps per set of exercise 1-2 Set of each exercise Moderate speed movements (6 seconds per repetition) 2-3 Minutes rest between sets
Type	Rhythmic exercises using the major muscle groups.	8-10 Compound exercises that target all of the major muscle groups

Examples of Physical Activities

1. Select an aerobic exercise such as walking, swimming and cycling.
2. Resistance exercise can be done using lighter weights, bands or body weight.
3. Chest press, and/or shoulder press, triceps extension, biceps curl, pull down (upper back), lower back extension, quadriceps extension or leg press, leg curls (hamstring), and calf raises (Appendix D).
4. Use a fitness tracking device/ application to monitor fitness progress.

Special Benefits

1. Enhances physiological functioning, lessening of cardiovascular symptoms.
2. Improves the quality of life and psychological status.
3. Reduces the coronary risk profile, by improving hypertension, dyslipidemia and diabetes.
4. Decreases mortality from those diseases.
5. Helps smoking cessation and reduces stress.
6. Exercise is a crucial component of the cardiac rehabilitation process.

Safety Tips

1. Medical consultation is a must prior to starting exercise as the patient might need cardiology clearance.
2. Start from baseline fitness level and then extend the duration gradually.
3. Use Ratings of Perceived Exertion and Dyspnea scales instead of heart rate to measure your intensity.
4. Medical supervision and monitoring are particularly recommended for patients with multiple risk factors, and with moderate-to-high risk of cardiac events (i.e. recent revascularization, heart failure).
5. Supervision should include physical examination, monitoring of heart rate, blood pressure and cardiac rhythm before, during and after exercise training.
6. Start exercise with proper warm-up and cool-down activity, like walking slowly for five to seven minutes before and after exercise.
7. Ensure adequate hydration before, during and after physical activity.
8. Hot shower should be avoided during the 15 minutes after physical activity, as it may result in an increased heart rate and arrhythmias.
9. When prescribed, advise the patient to carry nitroglycerin, especially during exercise.
10. Patients need to keep regular breathing pattern, and avoid breath holding and straining.
11. Patients need to avoid sustained, tight gripping, which may lead to a blood pressure elevation.
12. Always recommend exercising with a friend/family member.

When to Stop Exercise?

1. Whenever abnormal signs and symptoms are felt. E.g. chest pain, discomfort, dizziness, nausea, unusual shortness of breath or irregular heartbeats occur during or immediately after exercise.
2. Warn patient not to exercise to the point of chest pain or angina.

Sedentary Behavior (Sitting)

1. It is recommended to reduce the total amount of time spent sitting during waking hours and to also take regular breaks (e.g. every 20-30 minutes) from sitting.
2. Make physical activity a daily habit to reduce your sitting time (using stairs, active commuting, standing meetings and phone calls, parking car further away).
3. Take regular activity breaks from looking at a screen (standing, walking, bodyweight resistance exercises such as lunges, knee raises, squats).

Osteoarthritis

Osteoarthritis (OA) is the main form of arthritis that is characterized with different manifestations. OA ranges from an asymptomatic, that can be diagnosed through clinical or radiological examination incidentally, to progressive symptomatic disabling disease.
A common myth is that individuals with arthritis should not exercise. However, they need to be reassured that exercise is not only safe, but it also contributes to reducing pain, fatigue, inflammation, and disease activity.

	Aerobic Exercise Program	Resistance Exercise Program
Frequency	3 – 5 days/ week (or more)	2 days/week (non-consecutive days)
Intensity	Moderate to vigorous	Moderate = 60-70% 1 RM
Time	30 – 60 minutes/day	8-12 Reps per set of exercise 1-2 Set of each exercise Moderate speed movements (6 seconds per repetition) 2-3 Minutes rest between sets
Type	Rhythmic exercises using the major muscle groups.	8-10 Compound exercises that target all of the major muscle groups

Examples of Physical Activities

1. Land base exercises: the duration and type of exercise programs include a combination of elements including functional exercises (sit-to-stand, step-ups, stair climbing, and active range of motion exercise, aerobic activity, gym exercise, walking, Nordic walking).
2. Aquatic exercises (swimming, running/ walking and exercising in water)
3. Cycling outdoors or on a stationary bike.
4. Strength training programs that primarily incorporate resistance-based lower limb and quadriceps strengthening exercises.
5. Both weight-bearing and non-weight bearing exercise were included, as well as group and individual programs.
6. Flexibility training is important to maintain as well as improve range of motion (ROM) and to avoid the negative effects of arthritis on joints.

Special Benefits

1. Exercise maintains or improves strength and aerobic capacity, therefore minimizes or prevents joints functional limitation.
2. Exercise regularly improves neuromuscular control, balance, and capability to make activities of daily living (ADL).
3. Strength training contributes to reducing joint pain.
4. Aerobic exercise improves cardiorespiratory fitness with little to no joint pain or damage. Individuals with arthritis often have lower levels of cardiorespiratory fitness and muscle strength exercises are recommended prior to engaging in high-impact activities.
5. Improves mental health and quality of life.

Safety Tips

1. It is recommended to start with short exercise sessions, which include pain free/tolerable exercises. Long continuous aerobic exercise sessions may initially be difficult for deconditioned individuals who are restricted by pain and joint immobility.
2. Individuals with arthritis, particularly those with pain and those who are deconditioned, should gradually build-up exercise intensity and duration to provide clinically significant health benefits, reduce the chance of associated injuries and/or exacerbation of joint symptoms.
3. Motivate patients to exercise during day time when pain is typically at the lowest level.
4. In case of severe pain, it is recommended to avoid exercise but to maintain daily physical activity.
5. During acute flare-ups, it is highly recommended to stop strenuous exercises and gently move joints through their full range of motion
6. Use of medications when unbearable pain felt especially in early exercise sessions.
7. Patients are advised to shift from weight-bearing exercises whenever experiencing joint pain. Alternative non weight-bearing exercises are to be tried.
8. Exercise sessions should be tailored for each patient's requirements and joint involvement, but initially, it is best to be supervised by a physiotherapist.
9. Individuals with lateral compartment osteoarthritis are advised to wear medially-wedged insoles, while those with medial compartment osteoarthritis are advised to wear laterally-wedged subtalar strapped insoles.
10. Appropriate shoes with suitable shock absorption and good stability are important for people with arthritis. A podiatrist can be consulted for specific recommendations regarding the production of appropriate gait mechanics.
11. In the Aqua-based exercises, a water temperature of °28 to °31 C contributes to muscle relaxation, increases compliance and reduces pain.

12. Injuries can occur in football and other contact sports, which need to be avoided by patients with osteoarthritis.
13. An individual with osteoarthritis should avoid sports that include high loading in the form of both axial compression force and twisting. Basketball, handball, intense running, football, rugby and waterskiing are common examples of sports that should be avoided.

Sedentary Behavior (Sitting)

1. There is limited evidence on the benefits of reducing sitting time in people with osteoarthritis. Patients should be encouraged to build up their activity across the day and could achieve this by aiming at taking regular breaks from sitting. The most health benefit comes when inactive people with osteoarthritis become active.
2. Be active and reduce sitting time as daily physical may help in minimizing joints pain and maintaining musculoskeletal fitness.
3. The gradual build-up of both intensity and time of daily-living physical activity is recommended to reach the target towards active lifestyle with the least complication and minimal specialized supervision.

Osteoporosis

Osteoporosis is the loss of bone mass characterized by low bone strength. It is usually more common among females. Fractures are possible consequence of osteoporosis due to poor balance and increased risk of falls.

	Aerobic Exercise Program	Resistance Exercise Program
Frequency	3 – 5 days/ week (or more)	2 days/week (non-consecutive days)
Intensity	Moderate	Moderate = 60-70% 1 RM
Time	30 – 60 minutes/day	8-12 Reps per set of exercise 1-2 Set(s) of each exercise Moderate speed movements (6 seconds per repetition) 2-3 Minutes rest between sets
Type	Rhythmic exercises using the major muscle groups.	8-10 Compound exercises that target all of the major muscle groups

Examples of Physical Activities

1. Walking is good for bone density of the hip.
2. Swimming and cycling.
3. Water exercise is good for those with vertebral fractures.
4. Exercises to improve balance are easy to do and can help a lot *(i.e. stand on one foot, stand or walk on a balance board and walk backwards) (Appendix F).*

Special Benefits

1. Reduces the risk of falls and fractures.
2. Improves and maintains bone mass.
3. Improves strength and balance.
4. Aerobic and strength training exercise programs prevent and treat osteoporosis.

Safety Tips

1. Medical consultation is needed before starting any exercise program.
2. Patients need to take the appropriate precautions to avoid falls such as: wear appropriate shoes, use stable surfaces, keep exercise area free of hazards and use balance support, such as handrails or walking sticks.
3. Patients need to avoid high-impact (running and jumping) and contact activities. Make sure to execute each exercise in a stable position.
4. Patients need to start with a weight machine to increase the strength of the lower body, and add free weights as strength and balance improve.
5. Patients need to use a pedometer or other fitness devices/ applications to monitor progress and slowly work toward a goal, for instance 10,000 steps per day.
6. Consult your physician/dietitian about appropriate nutritional plans. Do not rely on personal trainers.

Sedentary Behavior (Sitting)

1. The most health benefit comes when inactive people with osteoporosis become active.
2. Becoming more active and reducing sitting time as daily physical activity reduce bone resorption and maintains strong bones.
3. The gradual build-up of both intensity and time of daily-living physical activities is recommended to reach the target towards active lifestyle with least complications and minimal specialized supervision.

Cancer

Cancer is a large group of diseases that can start in almost any organ or tissue of the body when abnormal cells grow uncontrollably, go beyond their usual boundaries to invade adjoining parts of the body and/or spread to other organs. Cancer can affect any age-groups but is more likely to develop in older adults. Healthy lifestyle modification such as exercising regularly, maintaining healthy body weight and avoiding tobacco products can contribute up to 50% prevention of cancer death. It is estimated that a sedentary lifestyle is associated with 5 percent of cancer deaths. Exercise may provide modest protection against breast, colon, bladder, kidney, lung, stomach, esophageal, prostate, endometrial, and pancreatic cancers.

	Aerobic Exercise Program	Resistance Exercise Program
Frequency	3 – 5 days/ week (or more)	2 non-consecutive days weekly
Intensity	Moderate to Vigorous	Moderate = 60-70% 1 RM
Time	30 – 60 minutes/day	8-12 Reps per set of exercise 1-2 Set(s) of each exercise Moderate speed movements (6 seconds per repetition) 2-3 Minutes rest between sets
Type	Rhythmic exercises using the major muscle groups.	8-10 Compound exercises that target all of the major muscle groups

Examples of Physical Activities

1. *Aerobic exercise such as walking, swimming and cycling.*
2. *Resistance exercise can be done using lighter weights, bands or body weight.*
3. *Chest press, and/or shoulder press, triceps extension, biceps curl, pull down (upper back), lower back extension, quadriceps extension or leg press, leg curls (hamstring), and calf raise (Appendix D).*
4. *Use a fitness tracking device/ application to monitor fitness progress.*

Benefits to Cancer Patients and Survivors

1. Regular exercise can reduce cancer patients' anxiety, fatigue, hospitalization and both disease and treatment-related side effects.
2. Boost fitness, especially muscular-mass to maintain body-posture and function and enhance the immune system.
3. Improve the quality of life and psychological status.
4. Improve the survival for patients treated for breast, colorectal, or prostate cancers.

Safety Tips

1. Medical consultation is needed on exercise-initiation.
2. Adequate healing time post-surgery is recommended; it could take up to 8 weeks based on the patient›s general condition and wound status. However, minimal physical activity can still be done during post-surgery healing time.
3. The gradual build-up of both the intensity and the time of exercise is recommended to reach the target with the least complication by an accredited exercise specialist.
4. Exercise is not recommended when the patient develops severe symptoms of disease or cancer therapy.

Cancer – Specific Recommendations

1. Breast cancer: start with the gradual build-up of low resistance, especially for the upper limb with clinical observation for any swelling; then, increase or decrease exercise intensity according to the symptoms. In case of swelling, it is highly recommended to reduce intensity of resistance training or temporarily stop exercise for 1-2 weeks, then re-start from previous training level. It is recommended to wear a properly fitted compression garment for the upper limb during exercise especially for those at risk for swelling "Lymphedema" after breast cancer surgery and/or radiation therapy (RT).
2. Prostate: pelvic floor exercises are highly recommended specifically for men who had a prostatectomy (surgical removal of the prostate) and it is better to start before surgery for better outcome in helping with urinary incontinence.
3. Colon: start with gradual build-up of abdominal strength exercise to minimize stoma herniation.
4. For individuals with bone marrow transplantation, it is highly recommended to initiate resistance training after aerobic training.

Sedentary Behavior (Sitting)

Patients can be encouraged to reduce their daily sitting time and take regular breaks from sitting to engage in activities that are tolerable and achievable for them.

Disabilities

Disability refers to individuals with long-term physical (i.e. spinal cord injury), mental impairments (i.e. depression), cognitive (i.e. learning difficulties), and/or sensory (i.e. visual impairment) which might cause various barriers to hinder their full and effective participation in society on an equal basis with others.
Evidence shows that regular physical activity provides important health benefits for people with disabilities, such as those with difficulty walking or climbing stairs; hearing; sight; or concentration; memory; or decision making. Adults with disabilities are three times more likely to have heart disease, stroke, diabetes, or cancer than adults without disabilities. Disability should not be a barrier to access and perform physical activity and sports. In fact, individuals with disability can take part in many activities and access outdoor spaces in Qatar for physical activity (the parks in Qatar are all accessible, which is quite unique!). Physical activity in this special population is even more important.
Each adult with chronic conditions or disabilities should engage in regular physical activity according to their abilities and should avoid inactivity. It is recommended for someone with disability to visit health care providers in order to tailor physical activity guidelines according to his/her condition and disability needs.

	Aerobic Exercise Program	Resistance Exercise Program
Frequency	3 – 5 days/ week (or more)	2 non-consecutive days weekly
Intensity	Moderate	Low to Moderate
Time	≥ 30 minutes per day or ≥ 150 minutes per week	
Type	Cardiovascular activities	Muscle strengthening activities

Examples of Physical Activities

It is recommended for someone with disability to consult a health care provider for performing physical activity that best suits the disability profile.

There are various accessible public venues in Qatar *(for more venues please refer to section 1.5)*.

Special Benefits

1. Improves mental health and quality of life.
2. Helps in preventing chronic disease.
3. Assists in maintaining healthy weight easily.
4. Improves ability to do daily tasks and increases independence.
5. Strengthens muscles and bones.
6. Improves fitness, mobility, and balance.
7. Creates new opportunities to meet new people and blend in the community.

Safety Tips

1. Consult a health care professional or a physical activity specialist about the amounts and types of physical activity that are appropriate for the existing abilities before starting an exercise program.
2. Start slowly based on abilities and fitness level, then increase gradually.
3. Exercise under supervision.
4. Use protective gear and appropriate equipment to reduce injury risks.
5. Make sensible choices about when and how to be active.
6. Drinking fluids during exercise is essential to remain hydrated and maintain physical and mental performance.

Sedentary Behavior (Sitting)

1. The most health benefit comes when inactive people with osteoporosis become active.
2. Becoming more active and reducing sitting time as daily physical activity reduce bone resorption and maintains strong bones.
3. The gradual build-up of both intensity and time of daily-living physical activities is recommended to reach the target towards active lifestyle with least complications and minimal specialized supervision.

3.2. Physical Activity for Children with Medical Conditions

Overweight and Obese Children and Adolescents

The amount of physical activity that is required to prevent and treat obesity among children and youth is not clear yet. It is recommended that overweight children are involved in 90 minutes of moderate to vigorous physical activities daily, with at least 10 minutes of vigorous activities. However, further studies are required to prove the efficacy of this amount of exercise on overweight and obese children.

	Aerobic Exercise Program	Resistance Exercise Program
Frequency	Daily	3 days/ week
Intensity	Moderate and Vigorous 10 minutes Vigorous/ day	Low to Moderate
Time	90 minutes/day	
Type	Cardiovascular activities	Muscle strengthening activities

Examples of Physical Activities

1. Aerobic exercise:
    a. **Moderate intensity:** cycling, brisk walking, skating, recreational swimming, scooter riding, and playground activities.
    b. **Vigorous intensity:** running, jogging, and sports such as basketball, football, handball, swimming and tennis.
2. Resistance Exercise:
    a. **Age 5-11:** tug- of- war, swinging on playground equipment, gymnastics, and climbing rope, tree, or wall.
    b. **Age 12-17:** use major muscle groups.
3. Integrate physical activity into the child everyday routines.
4. Expose children to a variety of activities and let them select what they enjoy to participate in regularly.
5. Register children in extracurricular activities and encourage them by taking them to training sessions and providing support from the sidelines.
6. Provide opportunities to interact with children of the same age.
7. Consult your physician/dietitian about appropriate nutritional plans, do not rely on personal trainers.
8. Visit playgrounds, parks and beaches.

Special Benefits

1. Improves cardiovascular fitness.
2. Improves vascular endothelial function.
3. Increases muscular strength.
4. Decreases body fat.
5. Increases lean body mass.
6. Improves indices of glucose metabolism such as decreased plasma insulin and glycated hemoglobin levels.

Safety Tips

1. Activities should be based on physical maturity rather than chronological age to reduce the risk of injury.
2. Frequency, intensity and time should be progressed gradually as the child develops.
3. Warm up and cool down to prevent injury.
4. Children need to use appropriate protective equipment (bicycle helmets, flotation devices, knee pads, shin guards, etc.).
5. Appropriately prescribe and supervise low to moderate intensity resistance training among preadolescents as they are at higher risk of injury.

Sedentary Behavior (Sitting)

1. It is recommended to reduce the total amount of time spent sitting during waking hours and to also take regular breaks (e.g. every 20-30 minutes) from sitting.
2. Reduce sedentary time (sitting or lying) while awake.
3. Limit screen time (electronic games, computer and television) to less than an hour a day, for 5-6 years old, and less than 2 hours a day for 7 years old and above.
4. Limit long periods of sitting, by moving more and integrating physical activity in the child's everyday routines.
5. Keep electronic equipment out of sight.

Children and Adolescents with Type 1 Diabetes

These physical activity guidelines for children and youth with diabetes are general. It is recommended for diabetic children and their parents to visit health care providers in order to tailor physical activity guidelines and recommendations to meet the need of the child. It is important to keep in mind that managing blood glucose levels vary from one child to another one according to the duration, intensity, and type of physical activity.

	Aerobic Exercise Program	Resistance Exercise Program
Frequency	Daily	3 days/ week
Intensity	Moderate to Vigorous Vigorous activities - 3 days/week	Low to Moderate
Time	60 minutes/day	
Type	Cardiovascular activities	Muscle strengthening activities

Examples of Physical Activities

1. Aerobic exercise:
    a. **Moderate intensity:** cycling, brisk walking, skating, recreational swimming, scooter riding, and playground activities.
    b. **Vigorous intensity:** running, jogging, and sports such as basketball, football, handball, swimming and tennis.
2. Resistance Exercise:
    a. **Age 5-11:** tug- of- war, swinging on playground equipment, gymnastics, and climbing rope, tree, or wall.
    b. **Age 12-17:** use major muscle groups.
3. Integrate physical activity into the child everyday routines.
4. Expose children to a variety of activities and let them select what they enjoy to participate in regularly.
5. Register children in extracurricular activities and encourage them by taking them to training sessions and providing support from the sidelines.
6. Provide opportunities to interact with children of own age.
7. Visit playgrounds, parks and beaches.

Special Benefits

1. Reduces cardiovascular risk.
2. Controls weight.
3. Lowers blood sugar level without increasing the risk of severe hypoglycemia.
4. Attains improved sense of well-being.

Safety Tips

- It is very important to balance insulin doses and carbohydrates intake with physical activity in order to avoid the occurrence of hypoglycemia or hyperglycemia.
- Keeping records (physical activity, glucose results, insulin, and carbohydrate) is important for good management.
- Provide appropriate education for diabetic children and their parents to ensure safe physical activity.
- Parents should make sure to inform coach, physical education teacher, and school nurse about the child's medical condition and management plan.
- The child should have a medic alert ID and a diabetes management plan.
- Please check the below advice before, during and after physical activity.

Before Physical Activity

1. Check blood glucose level:

- Avoid physical activity during hyperglycemia with ketones or hypoglycemia, such as in the following situations:
    - If the blood glucose is greater than 250 mg/dL, with ketones
    - If the blood glucose is less than 80-90 mg/dL
- In these situations, child should be advised to manage the blood glucose level to be within the normal level, and clear ketones in case of hyperglycemia and then exercise.

2. Manage glucose level:

- To help prevent hypoglycemia, reductions in bolus and/or basal insulin are typically required.
- Reduce rapid acting analog (bolus) prior to exercise which last longer than 30 minutes.
- Take the basal insulin at least 90 minutes before engaging in physical activity in order to reduce its effect.
- Avoid injecting the insulin in a site that will be heavily involved in physical activity.

3. Manage carbohydrates amount:

- Advice children to consume a meal of carbohydrates 1 to 2 hours before engaging in physical activity.
- Advice children to eat 1.0–1.5 g of carbohydrate/ kilogram of body weight/ hour for physical activity performed during insulin peak action, if insulin doses before physical activity are not reduced.

During Physical Activity

- Add muscle strengthening activities to aerobic activities to minimize the probability of hypoglycemia.
- Start with the muscle strengthening activities then aerobic activities to enhance the glycemic management.
- Monitor glucose continuously to avoid changes in blood glucose level during and after exercise.
- Keep children hydrated.
- Always have the required medication and sugars required for treatment of hypoglycemia available.

After Physical Activity

1. Manage glucose level:

- Measure and manage blood glucose level; specially before bedtime as hypoglycemia is possible up to 72 hours after physical activity due to increased insulin sensitivity.
- Decrease bedtime basal insulin by 10–20% if physical activity conducted during the afternoon or in the evening or is more intense than usual.

2. Manage carbohydrates amount:

- Children need to eat carbohydrates shortly after engaging in high-intensity physical activity that were performed in short duration.

Sedentary Behavior (Sitting)

1. Reduce sedentary time (sitting or lying) while awake.
2. Limit screen time (electronic games, computer and television) to less than an hour a day, for 5-6 years old, and less than 2 hours a day for 7 years old and above.
3. Limit long periods of sitting, by moving more and integrating physical activity in the child's everyday routines.
4. Keep electronic equipment out of sight.
5. Consult your physician/dietitian about appropriate nutritional plans. Do not rely on personal trainers.

Children and Adolescents with Respiratory Disorders

These physical activity guidelines for 5-17 year olds with asthma are general. It is recommended for those diagnosed with asthma and their parents to visit the physician in order to optimize asthma treatment and modify physical activity guidelines. It is important to keep in mind that severity and symptoms of asthma can vary considerably among children and adolescences.

	Aerobic Exercise Program	Resistance Exercise Program
Frequency	Daily	3 days/ week
Intensity	Moderate to Vigorous *Avoid vigorous activity when having an asthma exacerbation.	Low to Moderate
Time	≥ 60 minutes/ day	
Type	Cardiovascular activities	Muscle strengthening activities

Examples of Physical Activities

1. Aerobic exercise:
    a. **Moderate intensity:** cycling, brisk walking, skating, recreational swimming, scooter riding, and playground activities.
    b. **Vigorous intensity:** running, jogging, and sports such as basketball, football, handball, swimming and tennis.
2. Resistance Exercise:
    a. **Age 5-11:** tug- of- war, swinging on playground equipment, gymnastics, and climbing rope, tree, or wall.
    b. **Age 12-17:** use major muscle groups.
3. Integrate physical activity into the child everyday routines
4. Expose children to a variety of activities and let them select what they enjoy to participate in regularly.
5. Register children in extracurricular activities and encourage them by taking them to training sessions and providing support from the sidelines.
6. Provide opportunities to interact with children of their own age.
7. Visit playgrounds, parks and beaches.

Special Benefits

1. Improves cardiopulmonary function.
2. Symptoms of asthma induced by exercise may decrease with increasing activity.
3. Maintain healthy weight or reduce obesity which further improves asthma control.
4. Overall psychosocial benefits.
5. Improves overall quality of life.

Safety Tips

1. Children with asthma can and should participate in physical activity as much as desired, including competitive sports, except diving as it may provoke sudden airway narrowing.
2. Exercise-induced asthma can be managed effectively with medications and following certain precautions.
3. Exercise-induced asthma/bronchoconstriction can develop in children who do not have a history of known asthma and can be the only or predominant symptom of asthma.
4. Regular follow up with doctors to optimize asthma control and taking medication as prescribed is very essential.
5. Provide appropriate education for children with asthma and their parents to ensure safe physical activity.
6. Parents should ensure that the school offers safe physical education and activities for students with asthma.
7. The child should have a medic alert ID and an asthma action plan.
8. Please check the below advices before, during and after physical activity.
    a. Before physical activity:
        i. Ensure asthma is well controlled with no ongoing exacerbation.
        ii. Avoid provoking environmental conditions which makes asthma symptoms worse like cool dry air, dust, pollen, other pollutants or triggers.
        iii. Administer 2 puffs of salbutamol 15 minutes before exercise, or as instructed by doctor, to avoid asthma symptoms triggered by activity.
    b. During physical activity:
        i. Start with a warm-up.
        ii. Keep salbutamol within reach during physical activity for any symptoms like cough/ breathlessness. If symptoms are not relieved by salbutamol, discuss with the doctor about adding asthma controller medication (e.g. Montelukast or inhaled corticosteroids).
        iii. Adult supervision should always be available.
    c. After physical activity:
        i. In case of any continuing symptoms, discuss with doctor to adjust asthma control plan and add or change medications.

Sedentary Behavior (Sitting)

1. Reduce sedentary time (sitting or lying) while awake(sitting or lying, except when sleeping).
2. Limit screen time (electronic games, computer and television) to less than an hour a day, for 5-6 years old, and less than 2 hours a day for 7 years old and above.
3. Limit long periods of sitting, by moving more and integrating physical activity in the child's everyday routines.
4. Keep electronic equipment out of sight.

Children and Adolescents with Mental Health Disorders

These guidelines are for 5-17 year olds who suffer from depression or anxiety. If the child has any other medical conditions, please refer to the guidelines according to the medical condition the child has been diagnosed with for safety reasons.

	Aerobic Exercise Program	Resistance Exercise Program
Frequency	Daily	3 days/ week
Intensity	Moderate to Vigorous Vigorous activities 3 days/ week	Low to Moderate
Time	≥ 60 minutes/ day	
Type	Cardiovascular activities	Muscle strengthening activities

Examples of Physical Activities

1. Aerobic exercise:
    a. **Moderate intensity:** cycling, brisk walking, skating, recreational swimming, scooter riding, and playground activities.
    b. **Vigorous intensity:** running, jogging, and sports such as basketball, football, handball, swimming and tennis.
2. Resistance Exercise:
    a. **Age 5-11:** tug- of- war, swinging on playground equipment, gymnastics, and climbing rope, tree, or wall.
    b. **Age 12-17:** use major muscle groups.
3. Integrate physical activity into the child everyday routines.
4. Expose children to a variety of activities and let them select what they enjoy to participate in regularly.
5. Register children in extracurricular activities and encourage them by taking them to training sessions and providing support from the sidelines.
6. Provide opportunities to interact with children of the same age.
7. Visit playgrounds, parks and beaches.

Special Benefits

1. Treats mild, moderate and severe clinical depression.
2. Improves mood.
3. Reduces symptoms of anxiety.
4. Reduces day-to-day stress.
5. Boosts academic performance.
6. Increases self-reported happiness and lower levels of sadness and loneliness, both in the short-term and later in life.
7. Reduces feelings of fatigue, improve sleep quality, and lower's risk of insomnia.
8. Boosts self-esteem.

Safety Tips

1. Warm up and cool down exercise to prevent injury.
2. Those with lower back pain should avoid heavier sporting activities which involve lifting, twisting, pulling and pushing.
3. Yoga-style exercise and exercise to increase endurance of the abdominal and back muscles may be helpful.

Sedentary Behavior (Sitting)

1. Reduce sedentary time (sitting or lying) while awake.
2. Limit screen time (electronic games, computer and television) to less than an hour a day, for 5-6 years old, and less than 2 hours a day for 7 years old and above.
3. Limit long periods of sitting, by moving more and integrating physical activity in the child's everyday routines.
4. Keep electronic equipment out of sight.

Children and Adolescents with Down's Syndrome

The physical activity guidelines for children with Down's syndrome are general. It is recommended for children with Down's syndrome and their parents are recommended to visit health care providers in order to tailor physical activity guidelines. Some children with Down's syndrome may have activity restrictions due to congenital heart problems or atlantoaxial subluxation.

	Aerobic Exercise Program	Resistance Exercise Program
Frequency	Daily	3 days/ week
Intensity	Moderate to Vigorous Vigorous activities 3 days/ week	Low to Moderate
Time	≥ 60 minutes/ day	
Type	Cardiovascular activities	Muscle strengthening activities

Examples of Physical Activities

1. Aerobic exercise:
    a. **Moderate intensity:** cycling, brisk walking, skating, recreational swimming, scooter riding, and playground activities.
    b. **Vigorous intensity:** running, jogging, and sports such as basketball, football, handball, swimming and tennis.
2. Resistance Exercise:
    a. **Age 5-11:** tug- of- war, swinging on playground equipment, gymnastics, and climbing rope, tree, or wall.
    b. **Age 12-17:** use major muscle groups.
3. Choose active toys and pursuits over sedentary options. For example, choose toys that help develop skills like kicking, throwing and catching, such as balls, bats, tricycles and kites.
4. Encourage traditional childhood games such as hopscotch, skipping ropes, hula-hoops, hide-and seek, and obstacle courses, follow the leader, stuck in the mud, or tip/tag games which also encourage movement and skill development.
5. Choose an activity that the child enjoys: music and dance are popular among people with down syndrome.
6. Keep it simple: running, jumping, and dancing are great aerobic activities.
7. Encourage children to take the stairs instead of the lifts when in large buildings.
8. Encourage the child to be outdoors: simply spending more time outdoors can increase physical activity.

Special Benefits

1. Improves movement.
2. Encourages balance and coordination skills.
3. Supports bone development.
4. Helps maintain a healthy body weight.
5. Improves sleep, concentration, academic performance and self-esteem.
6. Reduces the risk of developing conditions such as heart disease, type 2 diabetes, osteoporosis, depression and obesity.
7. Encourages children to be independent.
8. Improves social skills.

Safety Tips

1. Set up a routine as many children with Down's syndrome like routine and repetitive behaviors, giving them the opportunity to master tasks and skills.
2. Activities should be based on physical maturity rather than chronological age to reduce the risk of injury.
3. Frequency, intensity and time should be progressed gradually as the child develops.
4. Warm up and cool down to prevent injury.
5. Children need to use appropriate protective equipment (bicycle helmets, flotation devices, knee pads, shin guards, etc.)
6. Obesity and respiratory problems may affect the child's ability to regulate heat and humidity in extreme situations.

Sedentary Behavior (Sitting)

1. Reduce sedentary time (sitting or lying) while awake.
2. Limit screen time (electronic games, computer and television) to less than an hour a day, for 5-6 years old, and less than 2 hours a day for 7 years old and above.
3. Limit long periods of sitting, by moving more and integrating physical activity in the child's everyday routines.
4. Keep electronic equipment out of sight.

CHAPTER FOUR

PHYSICAL ACTIVITY FOR SPECIAL CHALLENGING CONDITIONS

4.1. Environment: Heat, Humidity and Air Pollution

Heat and humidity during the summer months as well as the air quality (dust and pollution particles) play a very important role in how physical activity should be scheduled and undertaken in Qatar.

Safety Tips

During Hot Weather

- During hot weather, exercise preferentially in the morning or in the evening. Pick a time when the sun is not so strong or visible.
- Do not to wear too many layers of clothes, the sweat needs to evaporate.
- Go for indoor walking (shopping malls).
- Consider splitting the duration of exercise sessions. This could be achieved by having two - instead of one - sessions across a day. Alternatively, you could spread you moderate or vigorous activity across the day in regular small bouts e.g. 2 to 5 minutes in duration.
- Add frequent breaks and rest in the shade when required.
- Use high factor sunscreen (water based) on any exposed skin whilst wearing clothing protecting your head (wide brim hat for example) and eyes (grade 3 sunglasses).
- Drink fluids (preferably water) during physical activity. Drink plenty of fluids after the exercise to recover.
- If unaccustomed to exercising in the heat or if travelling recently from a cool region to Qatar, take a week or two to get used to exercising in warm conditions.

When Humidity is high

Reduce the risk of encountering particularly humid conditions. Remember, while ambient air temperature is an important factor, the relative humidity generally plays a more significant role in the risk of heat illnesses. Therefore, it is important to monitor the Wet Bulb Globe Temperature (WBGT), and if above 28°C, outdoor physical activity should be cancelled.

When there is poor Air Quality

If individuals are sensitive to low air quality (e.g. those with allergies, asthma and other related respiratory medical conditions), they must consider wearing a face mask (advanced models have specific filters for common pollutants found in the air), if air quality is low.

4.2. Fasting Adults

Fasting includes strictly refraining from consuming all forms of food and fluid intake from dawn to sunset.

	Aerobic Exercise Program	Resistance Exercise Program
Frequency	3 – 5 days/week	2-3 days/ week
Intensity	Light = 70-80% 1 RM	Light = 40- 50% 1 RM
Time	30- 60 minutes/ day	8-12 Reps per set of exercise 1-2 Set of each exercise Moderate speed movements (6 seconds per repetition) 2-3 Minutes rest between sets
Type	Cardiovascular endurance activities That involve large muscle groups	8-10 Compound exercises that target all of the major muscle groups

Examples of Physical Activities

1. Walking.
2. Jogging.
3. Cycling.
4. Rowing.

Special Benefits

1. Being moderately active while fasting leads to a better hydration status.
2. Allows maintaining or even gaining some fitness adaptations (depending on the level of fitness of the individual).

Safety Tips

1. For healthy individuals and athletes fasting during Ramadan, the best time of the day for programmed physical activity or high-intensity exercise is 2 to 3 h after Iftar.
2. A session that is performed before sunset (breaking the fast) should not exceed 60 consecutive minutes to avoid undesirable fatigue.
3. For individuals with diabetes, hypertension, unstable angina or other medical conditions, a close monitoring is required by a physician. In general, a consultation with a physician is recommended before any physical activity.
4. Terminate any physical activity immediately if feeling uncomfortable.
5. Consider naps and schedule times to rest in order to avoid fatigue.
6. Focus on the consumption of sufficient fluids to optimize hydration during post-fasting period. Avoid coffee consumption to ensure maintenance of good hydration status.

Sedentary Behavior (Sitting)

Avoid high amounts of sitting and take regular breaks from sitting during waking hours.

N.B.: For more details see **Aspetar Guideline on Exercising during Ramadan:** *www.aspetar.com*

4.3. Maternal Conditions

Preconception and Pregnancy

Women of childbearing age should be physically active. For many women, pregnancy is an appropriate time to modify behaviors and adopt a healthy lifestyle. These habits can positively affect the future health of both mothers and their babies.

	Aerobic Exercise Program	Resistance Exercise Program
Frequency*	≥ 5 days/week	2-3 days/ week
Intensity	Low to Moderate	Moderate = 60-70% 1 RM
Time	Accumulate 40- 60 minutes throughout the day “Anything is better than nothing”	8-12 Reps per set of exercise 1-2 Set of each exercise Moderate speed movements (6 seconds per repetition) 2-3 minutes rest between sets
Type	Cardiovascular endurance activities	8-10 Compound exercises that target all of the major muscle groups

*Previously inactive / unfit women shall gradually increase frequency to the recommended level

Examples of Physical Activities

1. Walking, Swimming, Cycling (low-impact aerobics)
2. Prenatal Yoga & Pilates

Special Benefits

1. Improves overall health and maternal cardiovascular fitness.
2. Prevents and controls hypertension and gestational diabetes mellitus.
3. Improves self-esteem and decreases risk of depression.
4. Makes postpartum weight loss easier.
5. Decreases fetal stress during delivery.
6. Stimulates increased neurological development.
7. Decreases the risk of infant obesity.

Safety Tips

1. Intense or vigorous exercise is discouraged.
   A light to moderate exercise intensity level should allow you to keep up a conversation while exercising. Becoming breathless as you talk, is a good indicator that you are exercising too strenuously.
2. Balance and agility may be compromised
3. Exercising in the supine or prone positions should be avoided after the first trimester.
4. Hot and humid places should be avoided.
5. Pool temperature should be °31 -28C.
6. Ensure adequate hydration
7. Avoid holding your breath while exercising (Valsalva maneuver).
8. Fasting during pregnancy is not recommendable, especially during the 1st trimester as the fetus is undergoing critical development.

Contraindications to Exercise During Maternity

Do Not Exercise
Absolute Contraindication:
1. Ruptured membranes, premature labor
2. Unexplained persistent vaginal bleeding
3. Placenta previa after 28 weeks gestation
4. Pre-eclampsia
5. Incompetent cervix
6. Intrauterine growth restriction
7. High-order multiple pregnancy (triplets)
8. Uncontrolled type 1 diabetes, uncontrolled hypertension or uncontrolled thyroid disease
9. Other serious cardiovascular, respiratory or systemic disorders

Discuss With Your Family Doctor
Relative Contraindications:
1. Recurrent pregnancy loss
2. History of spontaneous preterm birth
3. Gestational diabetes
4. Symptomatic anemia
5. Malnutrition
6. Eating disorder
7. Twin pregnancy after 28th week
8. Mild to moderate cardiovascular or respiratory disease
9. Other significant medical conditions

Stop Physical Activity Or Any Exercise Session And See Your Family Doctor If You Experience
1. Persistent excessive shortness of breath that does not resolve on rest
2. Severe chest pain
3. Regular and painful uterine contractions
4. Vaginal bleeding
5. Persistent loss of fluid from the vagina indicating rupture of the membranes.
6. Persistent dizziness or faintness that does not resolve on rest.

Sedentary Behavior (Sitting)

1. Avoid prolonged sitting, laying or motionless standing.
2. Sedentary behavior does not include your sleep at night. Schedule 8 hours daily.

Postpartum

Many of the physiologic and morphologic changes of pregnancy persist 4 to 6 weeks postpartum. Thus, pre-pregnancy exercise routines should be resumed gradually based on a woman's physical capability. Acceptable guidelines are to resume activity 4-8 weeks after vaginal delivery and 8-12 weeks following a cesarean section.

	Aerobic Exercise Program	Resistance Exercise Program
Frequency*	3-5 days/ week	2-3 times/ week
Intensity	Moderate	Moderate = 60-70% (1RM)
Time	45 minutes/week if previously inactive/ unfit or feeling fatigued, progressing up to 150min week	8-12 Reps per set of exercise 1-2 Set of each exercise Moderate speed movements (6 seconds per repetition) 2-3 Minutes rest between sets
Type	Cardiovascular endurance activities that involve large muscle groups	8-10 Compound exercises that target all of the major muscle groups No abdominal workout for a minimum of 4 months (for cesarean delivery)

*Gradually increase frequency to the recommended level; start 2-3 times/week during the first weeks (after giving birth) and build-up slowly to ≥5 days/week.

Examples of Physical Activities

1. Pelvic floor exercises that help strengthen the muscles under the uterus, bladder, and bowel. A pelvic floor muscle training exercise is like pretending that you have to urinate, and then holding it.
2. Walking.
3. Postnatal Yoga.
4. Other safe exercises after pregnancy include: swimming and aqua aerobics (once the bleeding has stopped), Pilates, low-impact aerobics, light weight training, cycling.

Special Benefits

1. Prevents the risk of diseases (for mothers and babies who are at high risk of obesity, diabetes, hypertension, metabolic syndrome and cardiovascular disorders).
2. Helps improve self-esteem, decrease post-partum depression or "Baby Blues".

Safety Tips

1. Medical consultation is required as the mother may get sad, easily cries or is anxious.
2. Ensure adequate hydration and proper caloric intake as breastfeeding already increases energy requirements besides those added by exercise.
3. Breast-feed before exercise or 1 hour after exercising because lactic acid levels can remain in breast milk for up to 1 ½ hours.
4. Postpartum women should not engage in activities that might cause abdominal trauma such as contact sports.

4.4. Exercise During Outbreaks, Pandemics, And Quarantine

An outbreak is the sudden occurrence of a disease which is referred to as a "pandemic" once spread all over the World. In the past few years, there have been quite a few outbreaks caused by the following diseases: Ebola, SARS, MERS, and COVID-19. The World Health Organization has provided evidence-based guidance to support countries in developing pandemic preparedness plans to prevent, prepare for and respond to the threat of a pandemic, based on lessons learnt from previous health crises over the years. Communities can protect themselves by adopting simple practices to reduce the chances of being infected. Physical activity should also be taken into consideration during such situations due to the proven health benefits on the individuals. Regular physical activity is in fact important for a healthy living; it helps in maintaining mental health, in addition to retaining and protecting immune function. Public health emergencies may affect the health, safety, and well-being of both individuals and communities causing emotional distress and poor immunity. Coping skills and psychological balance are crucial at this stage. Thus, seeking psychological assistance is recommended as part of crisis management.

At times of disease outbreaks, depending on the type of transmission, self-quarantine and physical distancing are enforced to prevent the rapid spread. This can lead to reduced physical activity levels due to the restricted movement of individuals and the limited access to exercise facilities. This chapter provides tips on how to maintain adequate levels of physical activity during a health crisis.
Please refer to the physical activity guidelines that best match your profile.

Safety Tips

1. High-intensity high volume training may suppress immune function especially if the person is not accustomed to it. A balanced workout program should be followed.
2. It is important to disinfect the training space, equipment and anything that is often touched often (i.e. dumbbells, barbells, etc.).
3. Use a personal water bottle and make sure to clean it at the end of each training session, especially if using sports supplements.
4. If possible, try home-based activities; and while training outside, minimize the risk of contagion through the following:
    - Maintain physical distance between yourself and others at least -2meters distance, if static.
    - Increase physical distance to 10-4m when running or cycling. Avoid running or cycling behind other people.
    - Avoid training in proximity of someone coughing or sneezing or small groups.
    - Wash hands thoroughly and more frequently (at least 20 seconds with soap and water).
    - Avoid touching the face.

Tips For Coping with Unusual Circumstances

1. Train regularly and work on various fitness aspects (home-based exercise).
2. Take care of your body. Eat healthy well-balanced meals, get plenty of sleep. Avoid alcohol and tobacco.
3. Try to maintain normal routines (i.e. sleeping and waking up early).
4. Stay connected with others (family/friends) using video/audio conferencing tools.
5. Stay informed and updated through following reliable local/ global sources of information such as the Ministry of Public Health in Qatar or the World Health Organization. Avoid overwhelming exposure. Do not trust fake news and messages about miraculous supplements or treatments.
6. Take breaks from watching, reading, or listening to news stories. Try to stay positive and focus on good things in life that are in your control.
7. Take time to renew spiritual bonds and find serenity through prayer, meditation or helping those in need.

Tips For Exercising Under Quarantine

1. Individuals who are not infected or infected but without symptoms, can continue moderate-intensity activity within their own space, taking into consideration the symptoms as a guide.
2. Try to join online classes and/or organize activities online with friends or family so you can avoid doing it alone.
3. If you like challenging yourself, look online for activity challenges which may motivate you to keep active
4. Maintaining quarantine prevents the spread of infection to others. However, when developing any related symptoms, stop exercise, contact your healthcare provider and follow the Ministry of Public Health of Qatar for any recommendations.

Examples of Physical Activities

1. Indoor aerobic activities such as brisk walking, using jump rope, climbing stairs, online classes, or using treadmills/ stationary bikes and turbo trainers (if available).
2. Outdoor aerobic activities such as brisk walking, running, bicycle riding around the house or rural areas to avoid contacts with others and ensure physical distancing
3. Simple resistance training such as: squats/sit-to-stands from a chair, push-ups against a wall or the floor, and lunges or single leg step-ups on stairs.
4. Download mobile applications providing exercise solutions that do not require equipment.
5. Enjoy active games with the family.
6. Yoga is recommended to reduce stress and anxiety. Several free and paid options are available online for yoga classes.

4.5. Substance Use

Substance abuse is one of the major public health issues worldwide. Therefore, it is important to highlight that the bad choice to use substances that are harmful to our health are still no excuse to further risk our health by being physically inactive.

*Please refer to the physical activity guidelines that best match your profile.

Special Benefits

1. Reduces cravings.
2. Reduces withdrawal symptoms and severity.
3. Regulates normal sleep patterns.
4. Promotes healthier lifestyle.
5. Offsets/reverses damage caused from substance use
6. Improves self-image and confidence.
7. Decreases risk of death from comorbidity associated with sedentary behavior common with select substance use habits.
8. Vigorous exercise increases cortisol and improves abstinence rates (lower cortisol levels have been shown to predict relapse to smoking).
9. Limits the weight gain seen in individuals quitting substances such as nicotine or experiencing side-effects from some prescribed medications for co-occurring mental health treatment.

Safety Tips

1. Careful medical screening is strongly recommended for individuals with long-term dependence on substances to assess additional risk due to co-occurring conditions.
2. Customize activity prescriptions based upon individual preferences, patient profile and substance history.
3. Supervised exercise early in recovery by a trained professional is more likely to be effective in treating addictive behaviors.
4. Care should be taken to limit delayed onset muscle soreness (DOMS) as perception of pain may be skewed for those recovering from use of substances such as opioids.
5. Understand that the risk of being active is low if patients have been medically cleared, begin with light activity and monitor progress gradually.

CHAPTER FIVE
REFERENCES, GLOSSARY AND APPENDICES

5.1 REFERENCES

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5.2 GLOSSARY

1 Rep Max	In weight training is the maximum amount of weight that a person can possibly lift for one repetition. It may also be considered as the maximum amount of force that can be generated in one maximal contraction.
Acclimatization	The process in which an individual adjusts to a change in an environment.
Aerobic Exercise	An activity that uses large muscle groups, can be maintained continuously, and is rhythmic in nature. It is a type of exercise that overloads the heart and lungs and causes them to work harder than at rest
Air Pollution	When excessive quantities of substances including gases, particulates and biological molecules are introduced into the Earth's atmosphere.
Air Quality	The composition of the air in terms of how much pollution it contains.
Ambient Air Temperature	The air temperature of an environment or object.
Balance	The maintenance of equilibrium while stationary or moving
Body Composition	The relative amounts of muscle, fat, bone and other vital parts of the body.
Cardiovascular Endurance	The ability of the circulatory and respiratory system to supply oxygen during sustained physical activity.
Compound Exercises	An exercise that involves more that on joint.
Coordination	The ability to use the senses, such as sight and hearing, together with body parts in performing tasks smoothly and accurately.
Delayed Onset Muscle Soreness (DOMS)	The pain and stiffness felt in muscles several hours to days after unaccustomed or strenuous exercise.
Exercise	A type of physical activity. consisting of planned, structured, and repetitive bodily movement done to improve or maintain one or more components of physical fitness.
Fat Loss	A reduction in weight of fat from body or reduction in percentage of body fat relative to lean mass.
Frequency	Frequency is commonly expressed in sessions, episodes, or bouts per day or per week.
Flexibility	A health-related component of physical fitness that relates to the range of motion available at a joint.
Health-Related Physical Fitness Components (5)	1. Cardiovascular endurance 2. Body Composition 3. Muscular Strength 4. Muscular Endurance 5. Flexibility
Humidity	Refers to the amount of water vapor present in the air.
Intensity	The rate of energy expenditure necessary to perform the activity to accomplish the desired function (aerobic activity) or the magnitude of the force exerted during resistance exercise
Intrauterine growth retardation	Refers to poor growth of the fetus whilst in the mother's womb.
Metabolic Equivalents (METs)	Expresses the approximate energy cost (in terms of oxygen consumption) of a particular activity relative to the energy expenditure at rest. For example at rest MET = 1, equivalent to oxygen consumption of about 3.5 mL O2 kg1-.min. Based on the validated list of activities in the Compendium of Physical Activities, for example walking at 3 mph: 3.3 MET; running at 8 mph: 13.3 MET. The total daily energy expenditure can be calculated, knowing body mass, the time spent in each activity and the relevant MET scores.
MET level for light PA	Less than 3 METS
MET level for moderate Physical Activity	6 -3 METS
MET level for vigorous Physical Activity	More than 6 METS
Muscle Strength	The ability of muscle to exert force.
Muscular Fitness	This term includes muscular strength, endurance, and power.
Muscular Endurance	The ability of muscle to continue to perform without fatigue
Muscular Strength	The ability of muscle to exert force
Musculoskeletal Injury	Refers to damage of muscular or skeletal systems, which is usually due to a strenuous activity.
Obesity	Generally, an individual with a BMI of 30 or more is considered as obese.
Overweight	A person with a BMI equal to or more than 25 is considered overweight.
Physical Activity	Defined as any bodily movement produced by the contraction of skeletal muscles that result in a substantial increase over resting energy expenditure (RER)
Physical Fitness	Defined as a set of attributes or characteristics that people have or achieve that relates to the ability to perform PA.

Pollutants	A substance or energy introduced into the environment that has undesired effects or adversely affects the usefulness of a resource.
Postpartum	The period of time following childbirth, after delivery.
Posture	The position in which someone holds their body when standing or sitting.
Power	The ability or rate at which one can perform work
Quality of Life	General well-being of individuals and societies, including everything from physical health, family, education, employment, wealth, safety, security to freedom.
Range of Motion	The extent of a movement of a joint measured in degrees.
Reaction Time	The time elapsed between stimulation and the beginning of the reaction to it.
Relative Humidity	The ratio of the partial pressure of water vapor to the equilibrium vapor pressure of water at a given temperature.
Repetition (Reps)	One complete motion of a specific exercise.
Resistance Exercise	Training achieved by working dynamically against weights or statically against fixed resistances.
Sedentary Behavior	Any waking behavior characterized by an energy expenditure ≤1.5 metabolic equivalents (METs), while in a sitting, reclining or lying posture.
Sets	How many times you repeat a specific exercise for a given number of reps (repetitions).
Skill-Related Physical Fitness Components (6)	1. Agility 2. Coordination 3. Balance 4. Power 5. Reaction Time 6. Speed
Speed	The ability to perform a movement within a short period of time
Sport	Sport covers a range of physical activities performed within a set of rules and undertaken as part of leisure or competition.
Time	The duration of each bout of any specific activity.
Type	The mode of exercise to be performed.
Weight Loss	Weight loss is the overall body weight reduction, which may be due to fat loss, lean mass loss, fluid loss, etc.
Well-Being	A state of positive health in the individual and comprising biological and psychological well-being as exemplified by quality of life and sense of well-being.

5.3 APPENDICES

Appendix A: Physical Activity Readiness-Questionnaire (PAR-Q+)

2019 PAR-Q+

The Physical Activity Readiness Questionnaire for Everyone

The health benefits of regular physical activity are clear; more people should engage in physical activity every day of the week. Participating in physical activity is very safe for MOST people. This questionnaire will tell you whether it is necessary for you to seek further advice from your doctor OR a qualified exercise professional before becoming more physically active.

GENERAL HEALTH QUESTIONS

Please read the 7 questions below carefully and answer each one honestly: check YES or NO.	YES	NO
1) Has your doctor ever said that you have a heart condition ☐ OR high blood pressure ☐?	☐	☐
2) Do you feel pain in your chest at rest, during your daily activities of living, **OR** when you do physical activity?	☐	☐
3) Do you lose balance because of dizziness **OR** have you lost consciousness in the last 12 months? Please answer **NO** if your dizziness was associated with over-breathing (including during vigorous exercise).	☐	☐
4) Have you ever been diagnosed with another chronic medical condition (other than heart disease or high blood pressure)? **PLEASE LIST CONDITION(S) HERE:** _____	☐	☐
5) Are you currently taking prescribed medications for a chronic medical condition? **PLEASE LIST CONDITION(S) AND MEDICATIONS HERE:** _____	☐	☐
6) Do you currently have (or have had within the past 12 months) a bone, joint, or soft tissue (muscle, ligament, or tendon) problem that could be made worse by becoming more physically active? Please answer **NO** if you had a problem in the past, but it **does not limit your current ability** to be physically active. **PLEASE LIST CONDITION(S) HERE:** _____	☐	☐
7) Has your doctor ever said that you should only do medically supervised physical activity?	☐	☐

If you answered NO to all of the questions above, you are cleared for physical activity.
Please sign the PARTICIPANT DECLARATION. You do not need to complete Pages 2 and 3.

- Start becoming much more physically active – start slowly and build up gradually.
- Follow International Physical Activity Guidelines for your age (www.who.int/dietphysicalactivity/en/).
- You may take part in a health and fitness appraisal.
- If you are over the age of 45 yr and NOT accustomed to regular vigorous to maximal effort exercise, consult a qualified exercise professional before engaging in this intensity of exercise.
- If you have any further questions, contact a qualified exercise professional.

PARTICIPANT DECLARATION
If you are less than the legal age required for consent or require the assent of a care provider, your parent, guardian or care provider must also sign this form.

I, the undersigned, have read, understood to my full satisfaction and completed this questionnaire. I acknowledge that this physical activity clearance is valid for a maximum of 12 months from the date it is completed and becomes invalid if my condition changes. I also acknowledge that the community/fitness center may retain a copy of this form for its records. In these instances, it will maintain the confidentiality of the same, complying with applicable law.

NAME _____ DATE _____

SIGNATURE _____ WITNESS _____

SIGNATURE OF PARENT/GUARDIAN/CARE PROVIDER _____

If you answered YES to one or more of the questions above, COMPLETE PAGES 2 AND 3.

Delay becoming more active if:

- You have a temporary illness such as a cold or fever; it is best to wait until you feel better.
- You are pregnant - talk to your health care practitioner, your physician, a qualified exercise professional, and/or complete the ePARmed-X+ at **www.eparmedx.com** before becoming more physically active.
- Your health changes - answer the questions on Pages 2 and 3 of this document and/or talk to your doctor or a qualified exercise professional before continuing with any physical activity program.

 1 / 4
11-01-2018

Source: Health and Fitness Journal Canada 2018

2019 PAR-Q+

FOLLOW-UP QUESTIONS ABOUT YOUR MEDICAL CONDITION(S)

1. Do you have Arthritis, Osteoporosis, or Back Problems?

If the above condition(s) is/are present, answer questions 1a-1c — If **NO** ☐ go to question 2

1a.	Do you have difficulty controlling your condition with medications or other physician-prescribed therapies? (Answer **NO** if you are not currently taking medications or other treatments)	YES ☐ NO ☐
1b.	Do you have joint problems causing pain, a recent fracture or fracture caused by osteoporosis or cancer, displaced vertebra (e.g., spondylolisthesis), and/or spondylolysis/pars defect (a crack in the bony ring on the back of the spinal column)?	YES ☐ NO ☐
1c.	Have you had steroid injections or taken steroid tablets regularly for more than 3 months?	YES ☐ NO ☐

2. Do you currently have Cancer of any kind?

If the above condition(s) is/are present, answer questions 2a-2b — If **NO** ☐ go to question 3

2a.	Does your cancer diagnosis include any of the following types: lung/bronchogenic, multiple myeloma (cancer of plasma cells), head, and/or neck?	YES ☐ NO ☐
2b.	Are you currently receiving cancer therapy (such as chemotheraphy or radiotherapy)?	YES ☐ NO ☐

3. Do you have a Heart or Cardiovascular Condition? This includes Coronary Artery Disease, Heart Failure, Diagnosed Abnormality of Heart Rhythm

If the above condition(s) is/are present, answer questions 3a-3d — If **NO** ☐ go to question 4

3a.	Do you have difficulty controlling your condition with medications or other physician-prescribed therapies? (Answer **NO** if you are not currently taking medications or other treatments)	YES ☐ NO ☐
3b.	Do you have an irregular heart beat that requires medical management? (e.g., atrial fibrillation, premature ventricular contraction)	YES ☐ NO ☐
3c.	Do you have chronic heart failure?	YES ☐ NO ☐
3d.	Do you have diagnosed coronary artery (cardiovascular) disease and have not participated in regular physical activity in the last 2 months?	YES ☐ NO ☐

4. Do you have High Blood Pressure?

If the above condition(s) is/are present, answer questions 4a-4b — If **NO** ☐ go to question 5

4a.	Do you have difficulty controlling your condition with medications or other physician-prescribed therapies? (Answer **NO** if you are not currently taking medications or other treatments)	YES ☐ NO ☐
4b.	Do you have a resting blood pressure equal to or greater than 160/90 mmHg with or without medication? (Answer **YES** if you do not know your resting blood pressure)	YES ☐ NO ☐

5. Do you have any Metabolic Conditions? This includes Type 1 Diabetes, Type 2 Diabetes, Pre-Diabetes

If the above condition(s) is/are present, answer questions 5a-5e — If **NO** ☐ go to question 6

5a.	Do you often have difficulty controlling your blood sugar levels with foods, medications, or other physician-prescribed therapies?	YES ☐ NO ☐
5b.	Do you often suffer from signs and symptoms of low blood sugar (hypoglycemia) following exercise and/or during activities of daily living? Signs of hypoglycemia may include shakiness, nervousness, unusual irritability, abnormal sweating, dizziness or light-headedness, mental confusion, difficulty speaking, weakness, or sleepiness.	YES ☐ NO ☐
5c.	Do you have any signs or symptoms of diabetes complications such as heart or vascular disease and/or complications affecting your eyes, kidneys, **OR** the sensation in your toes and feet?	YES ☐ NO ☐
5d.	Do you have other metabolic conditions (such as current pregnancy-related diabetes, chronic kidney disease, or liver problems)?	YES ☐ NO ☐
5e.	Are you planning to engage in what for you is unusually high (or vigorous) intensity exercise in the near future?	YES ☐ NO ☐

 2 / 4

11-01-2018

Source: Health and Fitness Journal Canada 2018

2019 PAR-Q+

6. Do you have any Mental Health Problems or Learning Difficulties? This includes Alzheimer's, Dementia, Depression, Anxiety Disorder, Eating Disorder, Psychotic Disorder, Intellectual Disability, Down Syndrome

If the above condition(s) is/are present, answer questions 6a-6b If **NO** ☐ go to question 7

6a.	Do you have difficulty controlling your condition with medications or other physician-prescribed therapies? (Answer **NO** if you are not currently taking medications or other treatments)	YES ☐ NO ☐
6b.	Do you have Down Syndrome **AND** back problems affecting nerves or muscles?	YES ☐ NO ☐

7. Do you have a Respiratory Disease? This includes Chronic Obstructive Pulmonary Disease, Asthma, Pulmonary High Blood Pressure

If the above condition(s) is/are present, answer questions 7a-7d If **NO** ☐ go to question 8

7a.	Do you have difficulty controlling your condition with medications or other physician-prescribed therapies? (Answer **NO** if you are not currently taking medications or other treatments)	YES ☐ NO ☐
7b.	Has your doctor ever said your blood oxygen level is low at rest or during exercise and/or that you require supplemental oxygen therapy?	YES ☐ NO ☐
7c.	If asthmatic, do you currently have symptoms of chest tightness, wheezing, laboured breathing, consistent cough (more than 2 days/week), or have you used your rescue medication more than twice in the last week?	YES ☐ NO ☐
7d.	Has your doctor ever said you have high blood pressure in the blood vessels of your lungs?	YES ☐ NO ☐

8. Do you have a Spinal Cord Injury? This includes Tetraplegia and Paraplegia

If the above condition(s) is/are present, answer questions 8a-8c If **NO** ☐ go to question 9

8a.	Do you have difficulty controlling your condition with medications or other physician-prescribed therapies? (Answer **NO** if you are not currently taking medications or other treatments)	YES ☐ NO ☐
8b.	Do you commonly exhibit low resting blood pressure significant enough to cause dizziness, light-headedness, and/or fainting?	YES ☐ NO ☐
8c.	Has your physician indicated that you exhibit sudden bouts of high blood pressure (known as Autonomic Dysreflexia)?	YES ☐ NO ☐

9. Have you had a Stroke? This includes Transient Ischemic Attack (TIA) or Cerebrovascular Event

If the above condition(s) is/are present, answer questions 9a-9c If **NO** ☐ go to question 10

9a.	Do you have difficulty controlling your condition with medications or other physician-prescribed therapies? (Answer NO if you are not currently taking medications or other treatments)	YES ☐ NO ☐
9b.	Do you have any impairment in walking or mobility?	YES ☐ NO ☐
9c.	Have you experienced a stroke or impairment in nerves or muscles in the past 6 months?	YES ☐ NO ☐

10. Do you have any other medical condition not listed above or do you have two or more medical conditions?

If you have other medical conditions, answer questions 10a-10c If **NO** ☐ read the Page 4 recommendations

10a.	Have you experienced a blackout, fainted, or lost consciousness as a result of a head injury within the last 12 months **OR** have you had a diagnosed concussion within the last 12 months?	YES ☐ NO ☐
10b.	Do you have a medical condition that is not listed (such as epilepsy, neurological conditions, kidney problems)?	YES ☐ NO ☐
10c.	Do you currently live with two or more medical conditions?	YES ☐ NO ☐

PLEASE LIST YOUR MEDICAL CONDITION(S) AND ANY RELATED MEDICATIONS HERE: _____

_____

GO to Page 4 for recommendations about your current medical condition(s) and sign the PARTICIPANT DECLARATION.

 3/ 4

11-01-2018

Source: Health and Fitness Journal Canada 2018

2019 PAR-Q+

If you answered NO to all of the FOLLOW-UP questions (pgs. 2-3) about your medical condition, you are ready to become more physically active - sign the PARTICIPANT DECLARATION below:

- It is advised that you consult a qualified exercise professional to help you develop a safe and effective physical activity plan to meet your health needs.
- You are encouraged to start slowly and build up gradually - 20 to 60 minutes of low to moderate intensity exercise, 3-5 days per week including aerobic and muscle strengthening exercises.
- As you progress, you should aim to accumulate 150 minutes or more of moderate intensity physical activity per week.
- If you are over the age of 45 yr and **NOT** accustomed to regular vigorous to maximal effort exercise, consult a qualified exercise professional before engaging in this intensity of exercise.

If you answered **YES** to **one or more of the follow-up questions** about your medical condition:

You should seek further information before becoming more physically active or engaging in a fitness appraisal. You should complete the specially designed online screening and exercise recommendations program - the **ePARmed-X+ at www.eparmedx.com** and/or visit a qualified exercise professional to work through the ePARmed-X+ and for further information.

Delay becoming more active if:

- You have a temporary illness such as a cold or fever; it is best to wait until you feel better.
- You are pregnant - talk to your health care practitioner, your physician, a qualified exercise professional, and/or complete the ePARmed-X+ **at www.eparmedx.com** before becoming more physically active.
- Your health changes - talk to your doctor or qualified exercise professional before continuing with any physical activity program.

- You are encouraged to photocopy the PAR-Q+. You must use the entire questionnaire and NO changes are permitted.
- The authors, the PAR-Q+ Collaboration, partner organizations, and their agents assume no liability for persons who undertake physical activity and/or make use of the PAR-Q+ or ePARmed-X+. If in doubt after completing the questionnaire, consult your doctor prior to physical activity.

PARTICIPANT DECLARATION

- All persons who have completed the PAR-Q+ please read and sign the declaration below.
- If you are less than the legal age required for consent or require the assent of a care provider, your parent, guardian or care provider must also sign this form.

I, the undersigned, have read, understood to my full satisfaction and completed this questionnaire. I acknowledge that this physical activity clearance is valid for a maximum of 12 months from the date it is completed and becomes invalid if my condition changes. I also acknowledge that the community/fitness center may retain a copy of this form for records. In these instances, it will maintain the confidentiality of the same, complying with applicable law.

NAME _____ DATE _____

SIGNATURE _____ WITNESS _____

SIGNATURE OF PARENT/GUARDIAN/CARE PROVIDER _____

For more information, please contact

www.eparmedx.com

Email: eparmedx@gmail.com

Citation for PAR-Q+

Warburton DER, Jamnik VK, Bredin SSD, and Gledhill N on behalf of the PAR-Q+ Collaboration. The Physical Activity Readiness Questionnaire for Everyone (PAR-Q+) and Electronic Physical Activity Readiness Medical Examination (ePARmed-X+). Health & Fitness Journal of Canada 4(2):3-23, 2011.

The PAR-Q+ was created using the evidence-based AGREE process (1) by the PAR-Q+ Collaboration chaired by Dr. Darren E. R. Warburton with Dr. Norman Gledhill, Dr. Veronica Jamnik, and Dr. Donald C. McKenzie (2). Production of this document has been made possible through financial contributions from the Public Health Agency of Canada and the BC Ministry of Health Services. The views expressed herein do not necessarily represent the views of the Public Health Agency of Canada or the BC Ministry of Health Services.

Key References

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 4/ 4

11-01-2018

Source: Health and Fitness Journal Canada 2018

Appendix B: Rate of Perceived Exertion (Modified Borg CR10 Scale)

RPE Scale	Rate of Perceived Exertion
10	**MAX Effort Activity** Feels almost impossible to keep going. Completely out of breath, unable to talk. Cannot maintain for more than a very short time.
9	**Very Hard Activity** Very difficult to maintain exercise intensity. Can barely breath and speak only a few words.
7-8	**Vigorous Activity** Borderline uncomfortable. Short of breath, can speak a sentence.
4-6	**Moderate Activity** Breathing heavily, can hold short conversation. Still somewhat Comfortable, but becoming noticeably more challenging.
2-3	**Light Activity** Feels like you can maintain for hours. Easy to breathe and carry a conversation.
1	**Very Light Activity** Hardly any exertion, but more than sleeping, watching TV, etc.

How to Use the Modified Ratings of Perceived Exertion (RPE) Scale

While doing physical activity, rate your perception of exertion (Appendix b). This feeling should reflect how heavy and strenuous the exercise feels to you, combining all sensations and feelings of physical stress, effort, and fatigue. Do not concern yourself with any one factor such as leg pain or shortness of breath, but try to focus on your total feeling of exertion.

Look at the modified RPE Scale while you are engaging in an activity. The scale ranges from 1 to 10, where 4-6 means “Moderate” and 10 means “maximal exertion.” Choose the number that best describes your level of exertion. This will give you a good idea of the intensity level of your activity, and you can use this information to decrease or increase the exercise intensity to reach your desired range.

Appendix C: Aerobic Exercises

Biking

Swimming

Running

Walking

Stationary Bike

Elliptical

Treadmill

Skating

Badminton

Football

Tennis

Nordic Walking

Martial Arts

Kayaking

Handball

Volleyball

Appendix D: Compound Exercises

Modality	Exercise	Picture
Free Weights	Chest Press • Barbell or Dumbbells • Flat, Incline or Decline	
	Rows • Barbell or Dumbbells	
	Military Press • Barbell or Dumbbells • Seated or Standing	
	Squat • Barbell or Dumbbells	
	Deadlift • Barbell or Dumbbells	

Modality	Exercise	Picture
	Lunges • Barbell or Dumbbells	
Machine Weights	Chest Press	
	Seated Row	
	Lat Pulldown	
	Shoulder Press	

Modality	Exercise	Picture
	Leg Press	
Free Weights	Push Up	
	Pull Up	
	Squat	
	Lunge	

Appendix E: Isolation Exercises

Modality	Exercise	Picture
	Bicep Curl • Dumbbell • Barbell • Cable	
	Triceps Extension • Dumbbell • Barbell • Cable	
	Quadriceps Extension	
	Leg Curl	
	Calf Raise	

Appendix F: Stretches for Major Muscle Groups

Major Muscle Group	Exercise	Picture
Chest	Pectoralis	
Back	Latissimus Dorsi	
	Upper Trapezius	
	Rhomboids	
Shoulders	Posterior Deltoid	

Major Muscle Group	Exercise	Picture
Legs	Glutes	
	Hip Flexors	
	Hamstrings	
	Quadriceps	
	Gastrocnemius	
	Soleus	

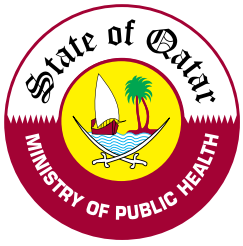
Appendix G: Balance Exercises

Exercise	Picture
Single Limb Stance	
Heel to toe Walking	
Back Leg Raise	

“Lack of activity destroys the good condition of every human being, while movement and methodical physical exercise save it and preserve it”

Plato

In collaboration with :



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