

## Executive Summary

### The 2011 Physical Activity Readiness Questionnaire for Everyone (PAR-Q+) and the Electronic Physical Activity Readiness Medical Examination (ePARmed-X+)

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This summary outlines the recent process employed to reduce barriers to physical activity participation for all persons (including those with established chronic disease and/or disability). These screening tools are intended for persons interested in becoming more physically active, allied health professionals, qualified exercise professionals, and physicians alike. Following is a point-by-summary of the process, the key recommendations, and new risk stratification strategy. Further information regarding this process can be found at [www.eparmedx.com](http://www.eparmedx.com).

## Introduction

- Regular physical activity is an important means of preventing and treating a wide range of chronic conditions. Thus, reducing the barriers to physical activity is of great importance for the overall health and well-being of Canadians.
- Clearance for physical activity participation is recommended when an individual is:
  - Planning to become more physically active than his/her habitual physical activity level.
  - Planning to undertake structured exercise or a sport that he/she is not accustomed to.
  - Planning to undergo a fitness assessment for health- or job-related purposes.
- The Physical Activity Readiness Questionnaire (PAR-Q) and the Physical Activity Readiness Medical Evaluation (PARmed-X) are internationally renowned and widely used pre-participation screening tools.
- Globally, it is estimated that up to 50 million people make use of the PAR-Q on an annual basis.
- Despite the widespread adoption of the PAR-Q (and to a lesser extent the PARmed-X) various limitations of these forms have been identified:
  - The original PAR-Q and PARmed-X were designed based on expert opinion without systematic evidence-based support. The lack of evidence-based support has limited the endorsement of these original forms (in particular the PARmed-X) by health care professionals and medical organizations.
  - End-users (such as qualified exercise professionals) have acknowledged that these forms may serve as a barrier to physical activity participation for those that may particularly benefit from routine physical activity.
    - The PAR-Q is purposely conservative leading to many “false positives.”
    - There is often inconsistent and/or improper usage of the clearance forms.
    - The education and preparation of some front-line fitness practitioners who use the tools is inadequate.
    - The age restrictions of the PAR-Q (i.e., 15 to 69 yr) often place an unnecessary barrier to physical activity participation for children, youth, and the elderly.
    - Data indicates that as many as 95% of individuals with a chronic medical condition that answer YES to one or more of the PAR-Q questions do not receive or seek medical clearance for physical activity.
    - Physicians often find the exercise clearance process cumbersome and time consuming.
    - Qualified exercise professionals (e.g., CSEP Certified Exercise Physiologists®) are becoming more involved in the primary prevention and treatment of various chronic diseases and disability.

#### Key Features of the new PAR-Q+ and ePARmed-X+

- The new PAR-Q+ contains a wide range of questions to identify any possible restrictions or limitations to physical activity participation.
- Pages 2 and 3 of the new PAR-Q+ contain a series of follow-up questions on specific chronic disease conditions to clear respondents or refer to the online ePARmed-X+.
- The online ePARmed-X+ allows for the further probing of additional information then possibly clearing or clearing with restrictions, such that a small proportion of clients are referred for additional medical probing and/or testing.
- *Persons normally screened out of physical activity participation are screened (often self-screened via the PAR-Q+ or ePARmed-X+) back into activity.*
- There are no age-restrictions to both the PAR-Q+ and ePARmed-X+.
- Qualified exercise professionals (i.e., university-trained individuals with advanced whole body exercise training and certification (such as a CSEP Certified Exercise Physiologist®)) take on a greater role in the risk stratification strategy.
- The PAR-Q+ screening is valid for a period of 12 months. The ePARmed-X+ screening is valid for a period of 6 months.
- A multi-language platform will be created.

#### References

- Jamnik VJ, Warburton DER, Makarski J, McKenzie DC, Shephard RJ, Stone J, Gledhill N. Enhancing the effectiveness of clearance for physical activity participation; background and overall process. *Appl. Physiol. Nutr. Metab.* 2011;36:S3-S13
- Warburton DER, Gledhill N, Jamnik VK, Bredin SSD, McKenzie DC, Stone J, Charlesworth S, Shephard RJ. Evidence-based risk assessment and recommendations for physical activity clearance: Consensus document 2011. *Appl. Physiol. Nutr. Metab.* 2011;36:S266-S298

## Systematic Review of the Evidence

- Seven systematic reviews were conducted to establish the exercise-related risks and effective risk stratification in prominent chronic conditions (with large population attributable risks).
  - Arthritis, Osteoporosis, & Back Problems
  - Cancer of any Kind
  - Heart or Cardiovascular Conditions
  - Metabolic Conditions
  - Psychological Conditions
  - Respiratory Conditions
  - Spinal Cord Injury and Stroke
- An additional paper assessed the risks associated with exercise testing and training in the general population.
- Two gap areas were also identified and systematically evaluated including 1) the role of the qualified exercise professional (including the requisite core competencies required for working with prominent chronic conditions), and 2) the risks associated with exercise during pregnancy.
- Over 540,000 articles were accessed, and the process adhered to the international standards established by the Appraisal of Guidelines for Research and Evaluation (AGREE) Instrument.
- A Level and Grade of evidence was provided for every article and recommendation reflecting the quality of evidence.

## Key Conclusions

- The newly created PAR-Q+ and ePARmed-X+ tools are now evidence-based.
  - More than 1,000 articles were included from over 540,000 retrieved articles.
- Systematic decision trees were created providing a new screening and new risk stratification strategy.
- Persons normally screened out of physical activity participation are now screened (often self-screened via the new PAR-Q+ and ePARmed-X+) back into physical activity.
- The role of the qualified exercise professional in the risk stratification and the exercise prescription/supervision process is clearly established.

## Key Findings and Recommendations from Systematic Reviews of the Literature

- Regular physical activity participation is associated with a reduced risk for over 25 chronic conditions and premature mortality.
- Moderate intensity physical activity on most days of the week is of benefit for the vast majority of persons with chronic disease and/or disability.
- The risk of an adverse exercise-related event (such as a heart attack) is exceptionally low (even in persons living with a chronic condition).
- **THE BENEFITS OF PHYSICAL ACTIVITY FAR OUTWEIGH THE RISKS IN PERSONS WITH AND WITHOUT CHRONIC DISEASE**
  - *"For most persons living with a chronic condition, if physical activity participation is not facilitated their risk of an adverse event and/or premature mortality increases greatly" (Warburton et al., 2011).*
- Systematic decision trees were developed allowing for the more effective risk stratification of prominent chronic conditions.
- The new risk stratification strategy includes low, intermediate (moderate), and high-risk categorizations.
  - Persons considered to be low risk may exercise at moderate intensities with minimum supervision.
  - Those at intermediate risk should exercise under the guidance of a qualified exercise professional with advanced training (such as a CSEP Certified Exercise Physiologist®).
  - Persons considered to be at high risk should exercise in a medically supervised setting that includes a qualified exercise professional.
- The new PAR-Q+ and ePARmed-X+ should be used without age restriction.
- Qualified exercise professionals play important roles in the physical activity participation clearance process and exercise testing/training.
  - National certification, advanced whole body exercise science (non-clinical and clinical) training, and formal standardized written and practical examinations are recommended.

## What Does the Future Hold for the PAR-Q+ and ePARmed-X+?

- The new PAR-Q+ and ePARmed-X+ forms have been designed to enhance the ability of fitness and healthcare professionals to provide effective exercise screening and prescriptions for healthy individuals and persons living with chronic disease and/or disability.
- This process is dynamic in nature and will continue to evolve over time.
- International partnerships have been formalized including the development of culturally appropriate forms in various nations.
- The future development of evidence-based clinical exercise prescriptions for prominent medical conditions.