



A-PREP



FIT TO SERVE

**Preparing for the A-PREP:
Alberta Physical Readiness Evaluation for Police**



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FIT TO SERVE!

Introduction

Policing takes place in a complex world that requires fast thinking and quick reactions. The profession demands many skills, both mental and physical. To test your physical suitability, the Alberta Association of Chiefs of Police (AACP) and the Alberta Solicitor General and Public Security sought to have an unbiased and valid assessment tool to effectively identify individuals who possess the physical capabilities needed to meet the rigorous demands of policing in Alberta. Further, this assessment tool must be fair and legally defensible from a Human Rights perspective and in accordance with both the Supreme Court of Canada's Meiorin Decision and the body of case law on bona fide occupational requirements (BFORs) that has accumulated since the Meiorin Decision was rendered.

Through extensive research and job analysis it was decided that the Ontario Physical Readiness Evaluation for Police (PREP) test for the screening of police constable applicants provided a suitable basis for Alberta's assessment tool. To this end, experts in establishing BFORs for physically demanding occupations were consulted to develop a customized version of the PREP as a valid tool for the fitness screening of police constable applicants in Alberta.

The Alberta Physical Readiness Evaluation for Police (A-PRÉP) is the name of the physical skills and abilities test.

Background

The A-PREP was developed by experts in the areas of policing, fitness and equality rights to ensure it is an unbiased and valid occupational requirement for policing. It is based on a comprehensive scientific process. We are confident that the A-PREP effectively identifies those individuals who possess the physical capabilities needed to meet the rigorous demands of policing.

To validate the A-PREP, researchers:

- conducted a comprehensive job analysis to identify policing tasks in which the safety of the police constable, co-workers or the public would be threatened by ineffective performance;
- compared the job simulation tasks in the A-PREP with the on-the-job policing tasks; and,
- established standards of acceptability based on the performance times of experienced female police constables.

In April 2002, the Ontario Human Rights Commission determined that requesting police constable candidates to pass the PREP is a reasonable and bona fide requirement.

Purpose

The purpose of this book is:

1. To inform you about the individual components of the A-PREP, how to successfully complete each component, and how you will be evaluated;
2. To provide exercise training guidelines to help you improve your capability to succeed at the A-PREP test, and
3. To show you how to test your readiness for the A-PREP.

A-PREP Test Components

There are three separate components to the A-PREP: a screening component to ensure your medical readiness and two performance components to assess your physical capability (the Pursuit/Restraint Circuit and the Aerobic Shuttle Run).

Attire and Equipment

Wear running shoes and exercise clothing while completing the performance components.

You will be provided with a weighted belt (7.5 kg or 16.5 lb) to wear during the Pursuit/Restraint Circuit to simulate the weight of standard police equipment.

A-PREP Screening Components

Pre-exercise Clearance and Informed Consent

Before attempting the A-PREP as part of the Constable Selection System, you will be required to complete the Physical Activity Readiness Questionnaire (PAR-Q) reproduced below. This health inventory identifies medical conditions that could pose a risk during the exercise and which need to be cleared by your physician.

The PAR-Q:

1. Has your doctor ever said that you have a heart condition and that you should only do physical activity recommended by a doctor?
2. Do you feel pain in your chest when you do physical activity?
3. In the past month, have you had chest pain when you were not doing any physical activity?
4. Do you lose your balance because of dizziness or do you ever lose consciousness?
5. Do you have a bone or joint problem that could be made worse by a change in your physical condition?
6. Is your doctor currently prescribing drugs (for example, water pills) for a blood pressure or heart condition?
7. Do you know of any other reason why you should not do physical activity?



FIGURE 1 - MEASUREMENT OF
BLOOD PRESSURE

Blood Pressure

Next, your pre-exercise blood pressure needs to be measured (Figure 1). If you are 40 years of age or less, answer “no” to all 7 PAR-Q questions and have a blood pressure equal to or less than 144/94 mmHg, you can participate in the A-PREP. Otherwise, a physician must complete the PARmed-X for to give clearance before you can take part in the A-PREP.

If you are over 40 years of age AND not accustomed to regular strenuous (vigorous) exercise, you could be cleared for participation in the fitness testing by a CSEP Certified Exercise Physiologist or be directed to see a physician who must then complete the clearance form of the PARmed-X before you undertake the A-PREP.

If you have two or more of the following major coronary risk factors: a family history of myocardial infarction or sudden death before 55 years of age; currently smoke cigarettes; have high blood pressure, have diabetes mellitus; have high blood cholesterol or work in a sedentary occupation and are physically inactive; you will need to be cleared by a physician who will complete the clearance form of the PARmed-X before you undertake the A-PREP.

Regardless of your PAR-Q responses, it is suggested that you have a physical examination by a physician before doing the A-PREP.

In addition, prior to participation, you must sign an **Informed Consent Form** which contains information about each component of the A-PREP test and identifies any risks associated with participation.

A-PREP Performance Components

Pursuit/Restraint Circuit

The circuit (diagram on page 11) simulates an emergency response in which a police constable pursues an offender a distance of 100 m while scaling four sets of stairs and two fences, engages in a physical altercation to accomplish the control and restraint of a resisting offender, then drags a passive resister or accident victim to a triage area.

Throughout this test, you wear a weighted belt (7.5 kg or 16.5 lb) around your waist to simulate the weight of standard police equipment.

In the pursuit phase of the test, you run four laps around a 25-metre (83 ft) circuit as quick as possible for a total distance of 100 metres (332 ft).

During each 25-metre circuit, you climb a set of stairs (Figure 2) and, during the second and fourth rotations of the circuit, you scale a 1.5 – metre (5ft) fence (Figure 30).

The fence is solid and has a toe-hold 18 inches above the ground. You must use the toe hold and roll over the fence.



FIGURE 2
– STAIR CLIMB



FIGURE 3 – SCALING THE FENCE



FIGURE 4 – BODY CONTROL SIMULATOR

Immediately following the 100-metre (332 ft) circuit, you move to the Body Control Simulator and grasp the handle (Figure 4).

You then move through two 180° arcs switching back and fourth every 90° between pushing and pulling the handle to raise a weight of 34 kg (75 lb).



FIGURE 5 – ARM RESTRAINT SIMULATOR

You then move to the Arm Restraint Simulator (Figure 5) and grasp the handles then depress the grips of both arms of the simulator. It takes 14.5 kg (32 lb) of force to depress each grip.

With the grips constantly depressed, the arms of the machine are forced together and then returned to their starting position. It takes 16 kg (35 lb) of force to retract each arm.



FIGURE 6 – BODY CONTROL
SIMULATOR - (PUSH)

You then return to the Body Control Simulator and repeat the pushing and pulling to raise the 34 kg (75 lb) weight through two more 180° arcs (Figure 6).

Return to the Arm Restraint Simulator and repeat the arm retraction exercise (Figure 5).



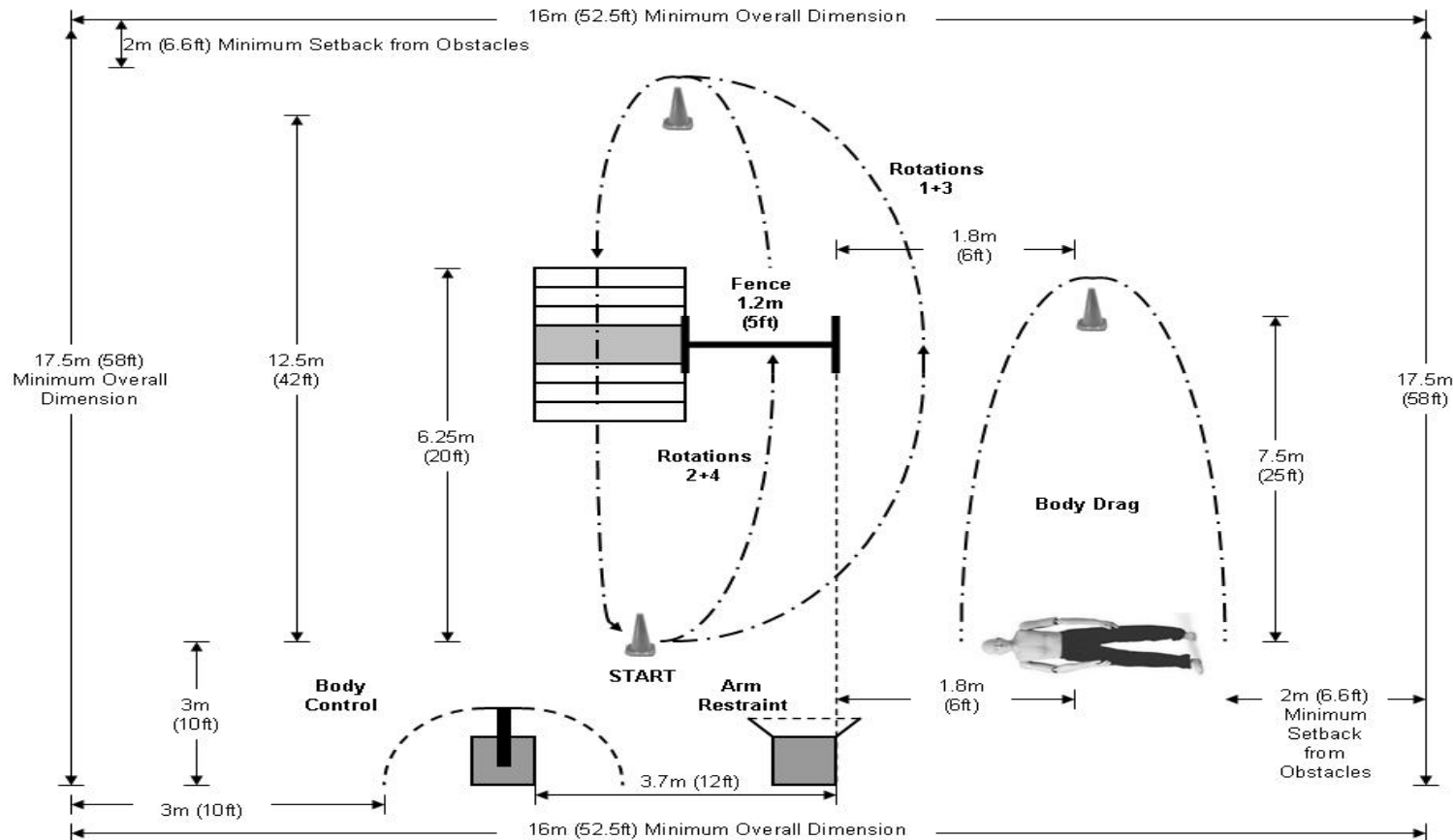
FIGURE 7 – BODY DRAG

Lastly, you grasp a 68 kg (150 lb) body and drag it a distance of 15 metres (50 ft) (Figure 7). You may grasp the body by the wrists or by the ankles.

The Pursuit/Restraint Circuit is scored as the total time from the start of the 100-metre (332 ft) circuit to the completion of the body drag.

For successful completion of the Pursuit/Restraint Circuit the time taken is 2 minutes and 10 seconds or less.

Following completion of the Pursuit/Restraint Circuit, you're allowed a minimum 10-minute rest before beginning the aerobic fitness test.





Aerobic Fitness Test

The Leger 20-metre Shuttle Run (Diagram 2 on page 13) evaluates your aerobic fitness or work capability for physically demanding policing tasks as well as everyday policing activities.

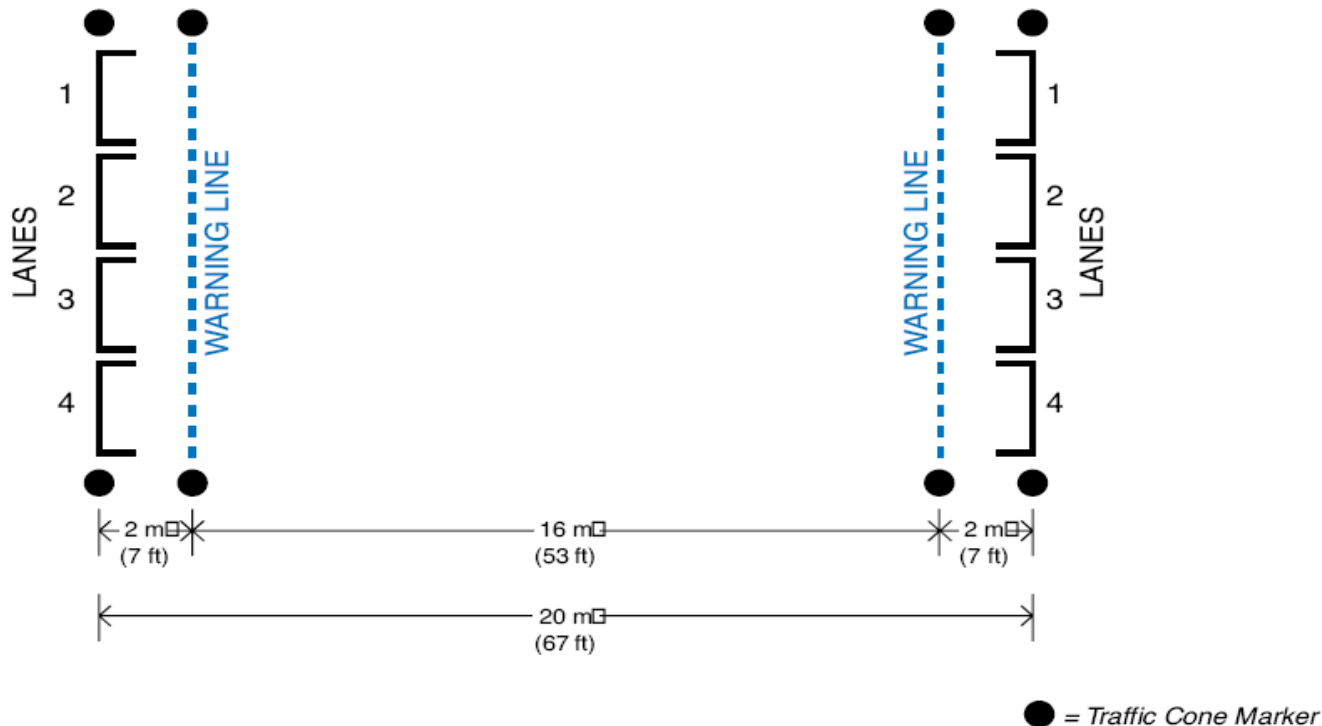
In this test, you run back and forth between two marked lines over a 20-metre (67 ft) course in time with audio signals recorded on a CD.

The time permitted to cover the 20 metres at the beginning of the test requires a slow jog. Thereafter, the time between audio signals lessens, requiring that you pick up your running pace. The audio signal informs you of the stage you are at as the test progresses.

In each leg of the Shuttle Run, warning lines, placed 2 metres (7 ft) before each of the 20-metre end lines, must be reached before the permitted time elapses and the audio signal sounds. You will be cautioned by an examiner if you fail to cross a warning line in time and you must still reach the end line before returning to the other side. The test ends when you miss two consecutive warning lines.

To successfully complete the minimum requirement of the aerobic fitness test you must achieve Stage 7.0 in the Leger 20-metre Shuttle Run.

Diagram 2: The 20-metre Shuttle Run



A-PREP Overall Scoring



An overall Meets Standard rating for the A-PREP requires that you complete the Pursuit/Restraint Circuit in 2 minutes and 10 seconds or less AND reach Stage 7.0 in the Leger 20-metre Shuttle Run.

Preparing for the A-PREP



Performing the A-PREP requires a combination of anaerobic fitness, cardiovascular endurance, and muscular strength & endurance.

Anaerobic fitness is needed for activities that require maximal or near-maximal effort for a short period of time.

Cardiovascular endurance is needed for activities that require oxygen to be delivered to the body for a considerable length of time.

Muscular endurance allows an individual to maintain or repeatedly generate forces over a period of time.

Muscular strength allows an individual to generate large forces over a short period of time

Warm-up

Before performing any lifting or movement session, a dynamic warm-up is necessary to activate the nervous system, properly warm-up the muscles and increase the range of motion (ROM) of the hips, shoulders and other joints in order to be ready for the activity and help prevent injury.

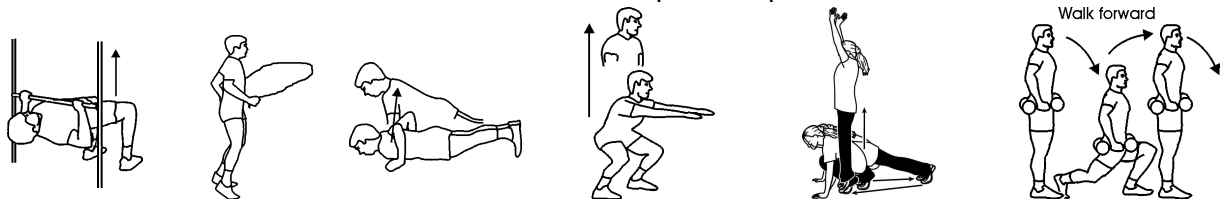
Warm-up drills and activities need to incorporate the movements included in the workout to follow as well as build up to the workout intensity. Contrary to popular belief, prolonged static stretching should not be performed prior to any workout where strength or explosiveness is the goal, as it shuts down the muscles, reducing their effectiveness. Rather, use warm-up drills and exercises to increase muscle and joint ROM without slowing them down.

Conditioning Circuit

A conditioning circuit is used as a method of cross training; it involves muscular strength & endurance, and will also improve your cardiovascular fitness. A circuit is an effective method of working all muscle groups in a short period of time. You can adapt the circuit to use what you have available to you (body weight, dumbbells, machines, etc), and it can be performed in a variety of locations.

Example Conditioning Circuit

A warm-up of at least 10 minutes should be performed before starting the circuit. Beginning with horizontal pull-ups, perform each station for 45 seconds. The circuit is performed on a running clock. It should take 4 minutes 30 seconds to complete all six stations. After the sixth station take 2 minutes of rest, and then repeat the circuit two more times for a total of three circuits. Cool down and stretch for 10 minutes upon completion.



Full Body Resistance Program

These programs are designed to help you build general whole body muscular endurance and strength.

Frequency: You should be doing at least 2 lifting sessions a week.

Sets: A set is a completed group of repetitions done without rest. When beginning the program, start with 2 sets of each exercise. Gradually build to 4 sets of each exercise.

Repetitions (Reps): Are the number of times that an exercise is repeated before rest is taken or another exercise is started.

Rest: Is the amount of rest needed between sets. Pay close attention to rest times as they change throughout the program.

Warm-up: A 10 minute warm-up should be performed before each workout. Your warm-up should elevate your heart rate and involve large muscle groups and exercise specific movements.

When doing any lifting program it is important to follow the sets, reps and rest periods given. When a rep range is given, e.g. 12-15, and you are achieving 15 reps over all sets then you should be increasing your weights. The last two repetitions of each set should be challenging decreasing in repetitions within the given repetition range.

WEEKS 1 – 2			
WARM UP 10 MINUTES			
RESISTANCE TRAINING			
Exercises	Sets	Reps	Rest
1. Air Squat	2–3	12–15	45–90 Sec
2. D.B. Bench Press	2–3	12–15	45–90 Sec
3. Walking Lunges	2–3	12–15	45–90 Sec
4. Seated Row	2–3	12–15	45–90 Sec
5. D B Seated Shoulder Press	2–3	12–15	45–90 Sec
6. Full Sit-up	2–3	Max (-2)	45–90 Sec
WEEKS 3–6 – LIFT 1			
WARM UP 10 MINUTES			
RESISTANCE TRAINING			
Exercises	Sets	Reps	Rest
1. Squat	3–4	8–10	90 Sec
2. Bench Press	3–4	8–10	90 Sec
3a. Lat Pull-downs	3–4	8–10	0
3b. Push-ups		Max (-2)	60 Sec
4a. Leg Curls on Stability Ball	3–4	12–15	0
4b. Back Extension		12–15	45 Sec
5. Russian Twist	3	1 Min	0
6. Rear Delt-Fly	3	10/arm	30 Sec
WEEKS 3–6 – LIFT 2			
WARM UP 10 MINUTES			
RESISTANCE TRAINING			
Exercises	Sets	Reps	Rest
1. Dead lift	3–4	8–10	90 Sec
2. Pull-ups (or variations)	3–4	Max (-2)	90 Sec
3a. Shoulder Press	3–4	8–10	0
3b. Seated Row		8–10	60 Sec
4a. Lunges	3–4	8–10 /leg	0
4b. Superman		10 /side	45 Sec
5a. Sit Ups with a twist at the top	3	1 Min	0
5b. External Rotations	3	10/arm	30 Sec

Remember:

It is important to understand and respect your training limits to prevent injury.

Remember:

To perform successfully on the push/pull unit, you are required to overcome a resistance of 35 kg (75 lb).

Remember:

To perform successfully on the arm restraint simulator, you must first overcome a grip resistance of 14.5 kg (32 lb) with each hand. While maintaining your grip, you must then bring your arms together against a resistance of 16 kg (35 lb).

Cardio Program

These programs are designed to help you increase your cardiovascular endurance.

Frequency: A minimum of one to two runs should be performed weekly.

Intensity: The training intensity must be high enough to improve your aerobic fitness. Your heart rate is the gauge as to whether your training intensity is sufficient. Use a heart rate monitor or learn to take your own pulse by placing your fingers on the underside of your wrist and counting the heart beats felt. It is best to stop exercising and count your pulse for 10 seconds then multiply it by 6 to get your heart rate for one minute.

To calculate your maximum heart rate, subtract your age from 220. Thus, to improve your aerobic fitness level, the target heart rate zone is 60-70% x (220-your age).

Here are three examples of runs you can use to help with your training. They are sorted in order of intensity. Ensure you have variety in your running program.

5 km Run		
Warm-up	Workout	Cool-down
➤ 5 min light jog ➤ 5 min dynamic stretch	➤ Low intensity 5 km Run @ 60-70% H R max	➤ 5 min light jog ➤ 10 min stretch
Threshold Run		
Warm-up	Workout	Cool-down
➤ 5 min light jog ➤ 5 min dynamic stretch	➤ 5 min Moderate Intensity ➤ 2 minute low intensity ➤ Repeat 2X (3 Reps total) Note: Use maintainable, not sprint paces!	➤ 5 min light jog ➤ 10 min stretch
Hill/Stairs (approx. 400m)		
Warm-up	Workout – continuous run	Cool-down
➤ 5 min light jog ➤ 5 min dynamic stretch	➤ 1 X ½ @ half speed ➤ 1 X ½, ¾, 1 @ full speed Note: Use maintainable, not sprint paces!	➤ 5 min light jog ➤ 10 min stretch

Sample Week

It is suggested that you start with 4-5 days a week of training. Ensure your training is done in an appropriate order. Use the table below for reference.

This is a general program to help applicants prepare for the A-PREP. Ensure you are working within your ability and familiarity level. If you need assistance contact a certified fitness professional.

Following this program will not guarantee success on the A-PREP.

Weeks 1-2

Workout 1	Workout 2	Workout 3	Workout 4
➤ Lift	➤ Conditioning or cardio	➤ Lift	➤ Cardio or conditioning

Weeks 3-6

Workout 1	Workout 2	Workout 3	Workout 4	Workout 5
➤ Lift	➤ Conditioning or cardio	➤ Lift	➤ Cardio or conditioning	➤ Lift, conditioning or cardio depends on individual needs

Note: Cardio workouts should be performed in the order given, starting with the run of least intensity to the run of highest intensity.

Self-testing for the A-PREP

Pursuit/Restraint Circuit

To simulate the pursuit/restraint circuit, try the following outdoors:

- distribute a total of approximately 7.5 kg (16.5 lb) of sand into several small plastic bags and tape them to a belt;
- locate a set of stairs with 5 steps and a 1.5 metres (5 ft) wooden or chain link fence that are close together. The fence should have a toe-hold 18 inches above the ground.
- place a marker approximately 8 metres (27 ft) from both the stairs and the fence;
- enlist a friend who weighs approximately 68 kg (150 lb);
- screw a large eye hook into a wall 1.2 metres (4 ft) above the ground, then attach a 35 kg (75 lb) weight, such as bag of sand, to a rope. Thread the rope through the eye hook and attach approximately 2 metres (6 ft) away from the eye hook to a sturdy piece of wood such as the handle of a hockey stick.

The following circuit should be performed without stopping while wearing the weighted belt.

The first element:

- Starting at the marker, run 8 metres (27 ft) to the stairs and climb up and down the stairs, and run back to the marker (Stage 1).
- Next, run 8 metres and scale up and over the 1.2 metre (4 ft) fence, then climb up and down the stairs again, and return to the marker (Stage 2).
- Repeat the 8-metre run and climb up and down the stairs, returning to the marker (repeating Stage 1).
- Then, repeat the 8-metre run and scaling of the fence plus stair climb for a second time (repeating Stage 2).
- Do one final 8-metre run to and climb of the stairs to complete a 100-metre (332 ft) run.



**FIGURE 8 BODY CONTROL
PUSH SIMULATOR**

As a safety precaution, ensure all equipment is sturdy, securely fastened and in good working order.

Next:

With your back toward the eye hook, grab the stick attached to the 35 kg (75 lb) weight with both hands and push it away from the eye hook until the weight is lifted off the ground (Figure 8).

Keeping the weight elevated, side-step through 4, 180° half-circles; 2 to the left and then 2 to the right.

Next, ask a friend who weighs about 68 kg (150 lb) to stand facing away from you with his/her arms straight down. Grasp his/her wrists and force them together behind the back. Ask your friend to resist your pressure.



FIGURE 9 BODY CONTROL PULL SIMULATOR

Return to the 32 kg (70 lb) weight and facing the eye hook, grip the stick with both hands and pull the weight off the ground, then side-step through another 6, 180° arcs (Figure 9).

Finally, repeat the retraction of your friend's arms once more, then have him/her lie down on the ground and drag him/her 15 metres (50 ft) by grasping him/her under the arms and around the chest.

Leger 20-metre Shuttle Run

Completing Stage 7.0 in the Aerobic Shuttle Run requires approximately the same level of aerobic fitness as running 2.4km (1.5 miles) in 12 minutes. You can test yourself by running for 12 minutes then measuring the distance you covered.

Improving Back Health

Years of riding in a patrol car or sitting at a desk can result in poor back health. However, the majority of back problems can be avoided with a regular routine of stretching and strengthening the muscles that support your back. Stretching these muscles will help to lengthen them and allow adequate range of motion of the hips and lower back. Use the series of stretches below in conjunction with other general mobility exercises to maintain overall good integrity of the hip and lower back.

Examples of Stretches for the Back:

Single bent-knee lifts. (Figure 10) While lying on your back with your knees bent, place your hands around the shin or hamstring of one leg and attempt to pull the knee as close as possible to the chest. Repeat with the other leg.

Double bent-knee leg lift and curl. (Figure 11) While lying on your back with your knees bent, place your hands around the shins or hamstrings of both legs and attempt to pull the knees as close as possible to the chest, then curl your head up gently toward your knees.



FIGURE 10 SINGLE BENT-KNEE LEG LIFTS



FIGURE 11 DOUBLE BENT-KNEE LEG LIFT AND CURL



FIGURE 12 LOWER BACK ROTATION

Lower back rotation. (Figure 12) Lie on your back and while keeping your shoulders flat on the ground, bend one knee and raise the leg to a 90° angle, then rotate it across the other leg and while pushing gently with your hand, attempt to bring the knee as close as possible to the ground. Repeat with the other leg.



FIGURE 13 UPPER BACK ROTATION

Upper back rotation. (Figure 13) In a sitting position with the right leg straight on the ground, lift your left foot over the knee of the straight right leg and put it flat on the ground beside the right knee. Place your right elbow against the left side of the bent left knee and, while applying pressure with your right elbow, rotate your upper body and head to the left. Repeat in the opposite direction.

Figure 14a



Figure 14b

Hip Stretch

Begin kneeling on the ground with both knees under your hips and one hand against a wall for support. (See Figure 14a.)

Keeping your chest up and shoulders back, extend one leg behind you. Make sure you extend the leg as far as possible (with the knee behind you, (See Figure 14b).)

This is to ensure you are stretching your hip flexors. Now gently push your hips forward.

Note: If you are able to maintain this position without any loss of balance from side to side, front to back, you may remove the supporting hand from the wall.

Improving Strength and Endurance for Back Health (See Figure 15)

Detailed guidelines for improving muscular strength and endurance are provided in the Full Body Resistance Program section on pages 16 and 17.

Examples of muscular strength and endurance exercises to improve back health are: Sit-ups, squats, Deadlifts, Back Extension, Russian Twists, and Supermans.



FIGURE 15 BACK EXTENSION

Personal Training Diary

To assist you with your preparation for the A-PREP a Personal Training Diary is provided. Record your training activities after each workout.

	Example	Week 1	Week 2	Week 3	Week 4
Day 1	• walk – jog 30 min • ten 50 m sprints				
Day 2	• upper and lower body weight training				
Day 3	• swim 30 min • ten 25 m sprints				
Day 4	• upper body weight training • cycle 40 minutes				
Day 5	• walk – jog 30 min • ten 50 m sprints				
Day 6	• upper and lower body weight training				
Day 7	• jog 40 min				

Aerobic Fitness:

Try to be active at least 3 times per week, for 50 – 60 minutes each time or 5 times per week for 30 – 40 minutes each time.

Muscular Strength and Endurance:

Perform 3 sets of 6 – 10 repetitions of an exercise at a resistance which is 80 – 90% of your maximum lifting capacity. Strength train every other day.

A Final Word

The information in this booklet has made you aware of what you will face and how you might prepare for the A-PREP, but these guidelines do not guarantee that you will pass the A-PREP test. By following the guidelines provided in this publication, however, you will improve your aerobic fitness, muscular strength and muscular endurance, which are essential fitness capabilities for safe and effective policing.

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NOTES:

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With any physical exercise program, there is a risk of physical injury. If you are unsure of your medical condition, and especially if you have any cardiovascular, pulmonary or metabolic disease, or a family history of such diseases, you should consult with your doctor before beginning or changing your exercise program. It is advisable to exercise with a partner and to use caution when using exercise equipment. The Ontario Ministry of Community Safety and Correctional Services and the Alberta Solicitor General and Public Safety shall not be liable for any damages, direct or indirect, special or consequential, which result from the use of equipment or exercise programs depicted in this brochure, including, without limiting the generality of the foregoing, any damages arising from injury.

