# Tactical and Rescue Unit – Pre-selection Guide

Peel Regional Police

The Tactical and Rescue Unit pre-selection guide was created by the Fitness and Healthy Lifestyle Unit to provide assistance for Police Constables preparing for the demands of the selection course. The information presented on physical training, injury prevention, and exercise nutrition is based on best practice and current research provided from regulated healthcare professionals.

The workouts included in this guide are sample training sessions intended to provide guidance in structuring workouts. For personalized exercise programs, please contact the Fitness and Healthy Lifestyle Unit.

Fitness & Healthy Lifestyle

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## Section I – Injury Prevention and Safety

It is recommended to speak with your physician and/or a qualified exercise professional prior to undertaking new or more vigorous exercise training.

**Warm up**

Ensure a thorough warm-up is completed prior to starting a physical training session. Warm-ups assist in maximizing exercise performance and preventing injury by increasing blood flow to major muscle groups, increasing core temperature, and increasing joint range of motion. Effective warm-ups include myofascial release, dynamic stretches, and multi-joint exercises progressing in intensity. The exercises completed in warm-ups should be specific to the movements and exercises completed in your workout.

**Cool down**

A cool-down period should be performed immediately following workouts to improve recovery and reduce muscle soreness. Effective cool-downs include light to moderate intensity movement, mobilization exercises (including the use of bands) and static stretching.

**Preventive care**

Repetitive strain injuries and over-training syndrome are preventable when following a smart, effective training plan. Seek treatment and advice from healthcare and exercise professionals to manage minor aches and prevent musculoskeletal injury. Incorporating planned recovery days into your training, consuming quality nutrition on a daily basis, and consistently getting sufficient sleep are critical components of recovery.

**Proper shoe selection**

Prior to engaging in large volumes of aerobic training (specifically running), it is highly encouraged to ensure your shoes are able to withstand run workouts to avoid injuries. The lifespan of running shoes typically ranges from 500 – 600 km. Continuing to run in significantly deteriorated shoes reduces running economy and increases risk of injury.

**Clothing**

Ensure workout apparel is appropriate and safe for environmental conditions. When exercising in extreme heat, wear light and breathable clothing, sunglasses and a hat. Pouring cold water on your head, hands and torso is an effective strategy to reduce core temperature and prevent overheating. When exercising in cold temperatures, wear multiple layers to trap heat around the torso and a toque to prevent heat loss. Ensure fingers and toes have sufficient coverage from cold temperatures with gloves, mittens, and socks to prevent frostbite.

# Section II – Exercise Nutrition

## Importance of Performance Nutrition

Having a smart and effective nutrition plan is important in properly preparing for the Tactical and Rescue Unit selection course. Optimizing nutrition intake throughout the course will maximize performance by providing your body the necessary fuel to complete strenuous physical activity for long durations.

**Carbohydrates** are the body's preferred source of fuel for moderate to high intensity activity. Consuming high amounts of carbohydrates throughout the selection course is essential for maintaining energy levels to respond to physically demanding tasks and increasing alertness to improve decision-making.

It is important to experiment with the foods and fuel you plan to consume throughout the selection course and practice your nutrition plan in training to avoid unexpected gastrointestinal distress and maximize performance.

## Fuelling for Exercise Performance

Focus on consuming > 50-65% of daily calories from carbohydrates. Higher consumption rates of carbs during intense periods of exercise is associated with increased performance. Quality sources of carbohydrates include pasta, rice, potatoes, bread, cereal, and legumes.

**Moderate Endurance Training Day Recommendations (< 75 min)**:

- 3-4 g/kg/day (e.g. 200 lbs person = 272-363 g of carbs consumed throughout the day)

**Moderate – Heavy Endurance Training Day Recommendations (1.5 – 2.5 hrs)**:

- 5-6 g/kg/day (e.g. 200 lbs person = 454-545 g of carbs consumed throughout the day

**Heavy Endurance Training Day Recommendations (> 2.5 hrs)**:

- 7-12 g/kg/day (e.g. 200 lbs person = 636-1090 g of carbs consumed throughout the day)


The Athlete's Plates are a collaboration between the United States Olympic Committee Sport Dietitians and the University of Colorado (UCCS) Sport Nutrition Graduate Program. www.teamusa.org/nutrition

**Hydration**

Daily fluid intake requirement is approximately 3 litres for men and 2.2 litres for women without exercise; consequently, you will need to consume greater amounts to prevent dehydration and optimize both physical and mental performance.

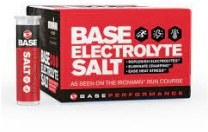
It is essential to consume electrolytes with water during multi-hour events to optimize hydration as electrolytes are lost through sweat. Due to individual differences in sweat rate (water and sodium loss), water and electrolyte consumption rates will vary and sodium losses can range from 200 mg – 1000 mg of sodium per hour. Popular electrolyte tablets and powders you can add to water are shown below. Consult with a Registered Dietician to have your sweat profile measured.

Nuun


BioSteel


Precision Hydration

LMNT




BASE Electrolyte Salt

## Fuelling for Selection Course

**Morning of Selection Course**

Eat 1.5 – 3 hours before the first scheduled event. Consume minimum of 1 g/kg of bodyweight of carbohydrates with breakfast to top up glycogen stores. Include protein with breakfast to delay hunger and avoid high amounts of fat and fibre to avoid gastrointestinal distress during physical activity.

Example quality breakfasts include:

- Oatmeal with banana and berries + sports drink or water with electrolytes
- Peanut butter and jam sandwich + sports drink or water with electrolytes
- Toast with jelly, 2 oranges + sports drink or water with electrolytes
- English muffin and/or bagel with eggs + sports drink or water with electrolytes
- Cereal or granola with milk or Greek yogurt, banana + sports drink or water with electrolytes

**Fuelling During Sessions**

Consuming simple carbohydrates throughout high intensity activity will maintain blood sugar and muscle glycogen levels. Simple carbs should ideally be consumed through fluids (e.g. Gatorade) or energy gels with water (e.g. Clif, GU, SIS) and eating light will help keep you feeling full (e.g. applesauce, crackers, pretzels). Mouth rinsing (i.e. swishing and spitting) a carbohydrate drink is also beneficial for improving physical and cognitive performance.

| Duration of Exercise | Carbohydrates Needed |
|---|---|
| 45 - 75 min | 0 - 20 g/hr |
| 1 - 2.5 hrs | 30- 60 g/hr |
| > 2.5 hrs | Up to 90 g/hr |

**Recovery Between Sessions**

The quicker you refuel after a session with carbohydrates and protein, the quicker your body will recover and replenish fuel stores. If time permits, eat a meal within 30 minutes after the completion of a session.

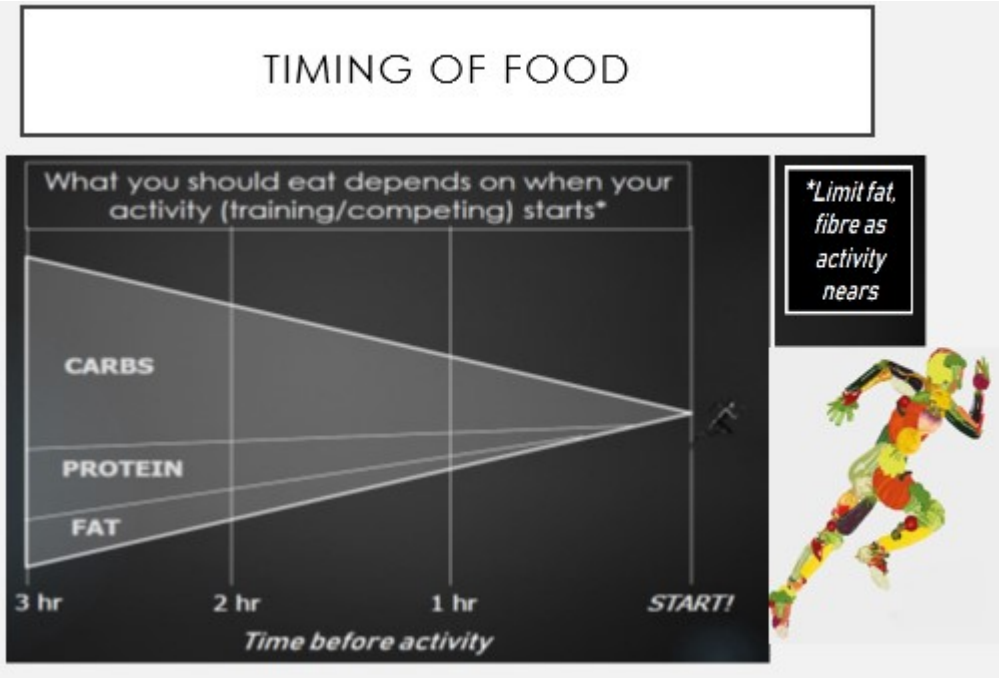
The majority of your recovery meal should consist of simple carbohydrates as these are broken down and absorbed quicker than complex carbohydrates. Consume a moderate amount of protein (15-25 g) and limit fat and fibre contents to a minimum. Avoid sports drinks with a zero calorie or sugar content as your body needs/requires the sugar (i.e. carbohydrates) to fuel high performance activity.

Example Quick Re-fuelling Ideas (recovery period < 45-60 min):

- Sports drink (e.g. Gatorade, Powerade, Skratch, GU, Tailwind)
- Energy gels (GU, Honeystinger, SIS, Clif, Maurten or maple syrup)
- High sugar fruit (banana, orange, berries, mangos, grapes, figs)

Example Meal Ideas (recovery period < 75 min):

- Turkey sandwich
- Pasta with tomato sauce and chicken
- Rice with chicken
- Clif bar, Quaker granola bar



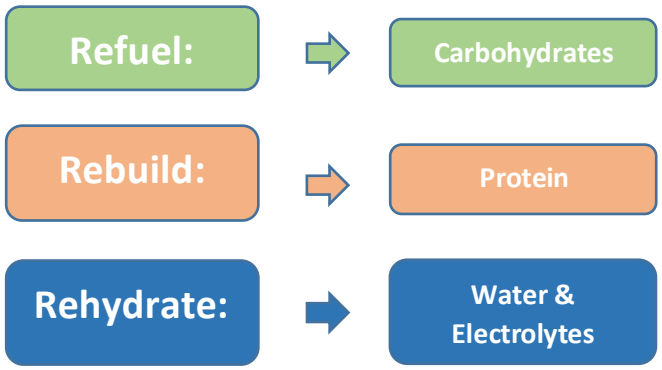

*Jennifer Sygo, M.Sc., RD, CSSD. Sports Dietitian East Hub. Athletics Canada PowerPoints: Fuel to Perform 2017 and Fuel for Performance Para-athletics 2018.*

Portable Protein-Rich Snacks:

- Nut butter on bread
- Trail mix
- Dried chickpeas or edamame
- Pita and hummus
- Tuna and crackers
- Hard-boiled eggs and whole grain granola bar

**Recovery After Selection Course**

Consume a full meal containing carbohydrates, protein, and healthy fats. If vegetables were limited throughout the day, ensure you consume a few cups of vegetables (cooked or raw) with afternoon or evening meals.



## Section III – Physical Training

**Strength Training**

A high level of muscular strength and power is essential for performing job requirements in an effective and safe manner. Strengthening major muscle groups will not only improve lifting capabilities but will reduce injury rates by reducing movement compensation under high load due to stress or fatigue and will increase tissue tolerance.

Incorporate a variety of exercises in your training regimen to strengthen your body under various movement patterns and loads. Regularly modifying the exercises, load, rep range, and environment in training exposes your body to variable demands and helps prepare for the unpredictable physical challenges faced throughout the selection course.

| Functional Movements to Prioritize in Training | |
|---|---|
| **Movement** | **Example Exercises** |
| Push | Chest press, Overhead press, Landmine press, Push-ups, Prowler sled |
| Pull | Bent-over row, Pull-up, Inverted barbell row, Deadlift, Prowler sled |
| Hip Hinge | Squat, Lunge, Deadlift (conventional, hex bar, Romanian, single-leg), Wall ball |
| Jump | Box jump, Broad jump, Lateral jump |
| Carry | Farmer's carry, Heavy bag clean, Suitcase carry |

**High Intensity Circuit and Interval Training**

Conditioning your body to be accustomed to working at periods of maximal intensity efforts is important in preparing for components of the selection course. High Intensity workouts can be structured into circuits with numerous rounds or with repeated intervals completed at a very high intensity. Ensure a thorough warm-up is completed prior to completing high intensity efforts.

| Muscular Endurance & Conditioning | | |
|---|---|---|
| **Workout Format** | **Description** | **Sample Workouts** |
| Interval Training | Complete a number repeated efforts at high intensity each followed by a short recovery period before starting the next effort. Intervals can be based on completing a required distance, time, or calories burned. | **Run**:<br>1) **5 – 8 x 400 m hard** (200 m recovery jog between)<br>2) **8 – 12 x 1 min hard** (30 sec recovery jog between)<br><br>**Bike**:<br>1) **10 – 15 x 30 sec sprint** (30 sec recovery between)<br>2) **4 – 6 x 3 min hard** (1 min recovery between)<br><br>**Assault Bike**:<br>1) **10 – 15 x 20 sec sprint** (20 sec recovery between)<br>2) **6 – 12 x 10 calories** (60 sec rest between)<br><br>**Row**:<br>1) **8 – 12 x 200 m** (30 sec rest between)<br>2) **6 – 12 x 1 min hard** (30 sec rest) |

| | | |
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| AMRAP (rounds) | Complete as many rounds as possible of an exercise circuit in a required period of time. | **Complete AMRAP in 15 min**:<br>- 10 x Thrusters<br>- 40 m Prowler sled push<br>- 10 x Barbell rows<br>- 40 m Prowler sled push<br><br>**Complete AMRAP in 20 min**:<br>- 10 x Push-presses<br>- 10 x Jump squats<br>- 5 x Pull-ups<br>- 10 x Push-ups<br>- 400 m run |
| AMRAP (reps) | Complete as many reps as possible of an exercise in a required duration. Take a short period of rest before starting the next exercise or rep in the workout. | **Complete AMRAP of the following exercises in 1 minute**. Take 1 min rest before starting the next exercise or round:<br>- Single-arm kettlebell swing to press<br>- Box jumps<br>- Heavy bag cleans<br>- Push-ups<br>- Thrusters |
| Circuits | Complete numerous rounds of a series of exercises. Take a short rest period before starting the next round. Functional movements should be prioritized in circuit workouts. | **Complete 4-5 rounds of the following push/pull circuit**. Take 1 min rest after completing each round:<br>- 5 – 10 x Pull-ups<br>- 10 x Overhead press<br>- 10 x Bent-over rows<br>- 15 x Push-ups<br><br>**Complete 5 rounds of the following whole body circuit**. Take 1 min rest after completing each round:<br>- 10 x Goblet squats<br>- 1 set of stairs (basement → 3rd floor → basement)<br>- 20 x Push-ups<br>- 30 x Mountain climbers<br>- 40 sec Front plank |
| EMOM | This format requires completing numerous rounds of an exercise (or series of exercises) starting at the top of the minute (i.e. X:00) and finishing before the end of the same minute. The amount of rest earned is dependent on the time remaining in the minute after completing the round. | **Complete the following circuit EMOM for 10 – 15 min**:<br>- 5 x Kettlebell swings<br>- 5 x Single arm kettlebell press (L)<br>- 5 x Single arm kettlebell press (R)<br>- 5 x Goblet squats<br>- 3 x Push-ups<br><br>**Complete the following circuit EMOM for 15 min:**<br>- 5 x Pull-ups<br>- 10 x Jump Squats<br>- 10 x Push-ups |

| | | |
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| Tabata | A format of interval training completing 20 seconds of work followed by 10 seconds of rest. | **Complete 8 rounds of 20 sec on, 10 sec off for each of the exercises listed below**. After completing the 8th round of the first exercise, take 1 min rest before starting the 1st round of the second exercise:<br>- Bike sprints (stationary or assault bike)<br>- Push-press<br>- Box jumps or Jump squats<br>- TRX rows<br>- Kettlebell swings |

**Endurance Training**

Cardiovascular fitness is the foundation of performance in high intensity exercise greater than two minutes in duration. The aerobic energy system provides the most energy for longer duration high intensity efforts and its contribution of energy increases as exercise duration increases.

Your reliance on performance in activities as short as two minutes and as long as several hours (e.g. 800m sprint to 20 km run) is largely dependent upon your aerobic base. As your aerobic fitness improves, your body will become better at resisting fatigue, you will recover quicker between strenuous bouts of activity, and you will perform at higher levels both physically and cognitively during prolonged tasks.

Running should be prioritized in training for improving cardiovascular fitness due to its specificity and importance in completing job-related tasks. As musculoskeletal tissues in the lower extremities take longer to adapt to training stress in comparison to the cardiovascular system, exercise caution when increasing training volume (i.e. run duration and distance) to avoid injury. Numerous run workouts are provided in the table below:

| Workout Type | Intensity | Benefits/Goal | Sample Workouts |
|---|---|---|---|
| Easy/Steady | Easy to Moderate<br><br>(4-6/10 RPE) | • Improve aerobic base<br>• Strengthen musculoskeletal tissue tolerance | 25 – 45 min at a steady pace where breathing is not heavy |
| Interval | Very High<br><br>(8-9/10 RPE) | • Improve maximal oxygen uptake ($VO_2$ max), lactate threshold, and top-end running speed<br>• Improve ability to run very fast for short durations repeatedly while being accustomed to short periods of recovery | 6 – 12 x (1 min very hard, 1 min jog)<br><br>4 – 8 x (2 min hard, 1 min jog)<br><br>4 – 8 x (400 m very hard, 200 m jog) |
| Tempo & Threshold | High<br><br>(7-8/10 RPE) | • Improve lactate threshold<br>• Accustom your body to run at a high intensity for a prolonged period without allowing for rest or recovery breaks | 15 – 20 min at 8/10 effort<br><br>25 – 30 min at 7.5 - 8/10 RPE |

| | | | |
|---|---|---|---|
| Progression | Moderate to High<br><br>(building from 5-9/10 RPE) | • Build aerobic endurance<br>• Improve lactate threshold | 5 min easy, 5 min steady, 5 min moderate, 5 min hard, 5 min very hard, 5 min easy |
| Long | Moderate to Difficult<br><br>(4-7/10 RPE) | • Build aerobic endurance<br>• Strengthen musculoskeletal tissues | > 50 min at a steady pace |

**Recovery**

Sleep has the biggest influence on recovery from physical training. Aim to sleep 7-9 hours each night to maximize training adaptations and recovery.

Consume sufficient quantities of protein and carbohydrates in your diet on both training and recovery days. Refer to Section II for details on optimizing nutrition for athletic performance.

Incorporate rest and recovery days into your training regimen to avoid overtraining, burnout, injury, and maximize training efficiency. Completing periods of myofascial release, stretching and mobility exercises, and active recovery sessions (e.g. cycling, walking, yoga) can facilitate recovery through the increase in blood flow to muscle tissue. Measuring heart rate variability using research-based technology (e.g. WHOOP, HRV4Training, Oura ring) can provide personalized feedback on recovery based on physiological measures.