



OLS-PPAT

**Omni Life Support's
Paramedic Physical Abilities Test
2nd Edition**

OLS-PPAT

Information Package

At one time, most vocations were thought of as either being predominantly an exercise of the mind (i.e. doctors, lawyers, accountants, etc.) or an exercise of the body (i.e. movers, construction laborers, farmers, etc.). It is now widely accepted that a sharp healthy mind and a robust healthy body are, to a great extent, proportional to each other and that success in most any line of work is attributable to a good balance between both etiologies.

Paramedicine is an excellent example of this. With an ever-broadening scope of practice and a population that continues to grow larger and become sicker, it is essential that today's paramedics take a holistic approach to their continued training.

Omni Life Support's Paramedic Physical Abilities Test (OLS-PPAT) was designed to identify indicators of poor health and weak areas in a Paramedic candidate's physical abilities as they relate to the physical demands of Paramedic duty. The OLS-PPAT was born from an endeavor by a joint committee of Registered Personal Fitness Trainers and licensed industry Paramedics to identify essential paramedic job physical requirements and create a representative means of testing a paramedic candidate's ability to function safely and effectively in that environment. The test will be comprised of a pre-test clearance evaluation, and stations designed to simulate the various tasks and physical demands that accompany a standard emergency house call.

You will find contained within this package:

- A PAR-Q to be filled out and submitted to the test administrator prior to participating in the testing procedure. If a “**Yes**” response is given to any of the questions, the candidate will be asked to consult with a physician and obtain written clearance prior to being permitted to participate in the testing procedure.
- Waiver of Liability, Indemnity Agreement, and Assumption of Risk. This must be completed prior to commencement of the OLS-PPAT.
- OLS-PPAT preparation guide
- Explanation of pre-test clearance evaluation, test outline and task representation.
- Score sheet
- Sample certificate of completion

Waiver of Liability, Indemnity Agreement, And Assumption of Risk

Waiver: In consideration of my participation in the Omni Life Support Training And Consulting Inc. (hereafter referred to as OLS) Paramedic Physical Abilities Test (PPAT), on behalf of myself, my heirs, personal representatives, or assigns, I, _____, **do hereby release, waive, discharge, and covenant not to sue OLS, its owners, officers, employees, volunteers, and agents, from liability from any and all claims arising from the ordinary negligence of OLS or any of the aforementioned parties.**

This agreement applies to personal injury (including death) from accidents or illnesses arising directly or indirectly from participation in activities directed, suggested, or planned by OLS including, but not limited to, the OLS-PPAT.

Indemnification and Hold Harmless: I also agree to **hold harmless and indemnify** OLS, its owner, officers, employees, volunteers, agents, and insurance carriers from all claims (whether initiated by me or by a third party). I further agree to pay all expenses, including court costs and attorneys' fees, incurred by OLS and the aforementioned parties in investigating and defending a claim or suit resulting from my participation in any OLS abilities testing.

Severability: I further expressly agree that the foregoing waiver and assumption of risk agreement is intended to be as broad and inclusive as is permitted by the law of the Province of New Brunswick and that if any portion thereof is held invalid, it is agreed that the balance shall, notwithstanding, continue in full legal force and effect.

Acknowledgment of Understanding: I have read this waiver of liability and indemnification agreement and fully understand its terms. **I understand that I am giving up substantial rights, including my right to sue. I acknowledge that I am signing the agreement freely and voluntarily and intend my signature to be a complete and unconditional release of all liability for injury resulting from ordinary negligence to the greatest extent allowed by law in the Province of New Brunswick.**

X _____
Signature of Client

Date

PPAT Preparation Guide

1. Candidates should come prepared with appropriate clothing to participate in physical testing (i.e. loose clothing & athletic footwear).
2. Candidates will be made aware of their test date in advance and will be expected to arrive well rested.
3. Candidates who smoke cigarettes are advised to abstain from smoking for at least 2 hours prior to testing as this can adversely affect the heart rate.
4. Candidates are advised to avoid caffeine for 2 hours prior to testing as this can adversely affect the heart rate.
5. Candidates should avoid large meals for 2 hours prior to testing as this can adversely affect performance.
6. Our cancellation policy is as follows:
 - a. In the event you are unable to make it to your scheduled session, please contact Omni Life Support at 830-4CPR (4277) within 72 hours of your session for a full refund. Last minute cancellations (less than 72 hours) will be rescheduled at no additional charge. If you fail to attend a training date without notice there is no refund.
 - b. Severe Weather Policy: In the event that weather creates conditions that are not suitable for travel we will cancel the training/testing session. We will attempt to give participants a 12-hour notice via email if the appointment will be cancelled. As weather can be unpredictable the 12-hour notice is not a guarantee. All cancellations will be posted on our Facebook page. You can visit our page at: <https://www.facebook.com/omnilifesupport>.

Pre-Test Clearance Evaluation

Prior to commencement of the OLS-PPAT, the candidate must indicate whether he/she knows of any reason that he/she should not perform this test. If a “**Yes**” response is given, an alternate date *may* be considered. If a “**No**” response is given, the candidate shall proceed.

The candidate’s pulse will be assessed. If the candidate’s resting heart rate is **greater than 100 beats/minute** (as per Canadian Physical Activity, Fitness and Lifestyle Approach Guideline), he/she will be asked to sit and rest for 5 minutes. Following the rest period, the candidate’s heart rate will be reassessed. If his/her heart rate remains above 100 beats/minute, the candidate will be asked to have a physician complete the PARmed-X form or provide written clearance prior to the candidate participating in the testing. If his/her resting heart rate is below 100 beats/minute, the candidate may proceed.

The candidate’s blood pressure will also be assessed. If his/her blood pressure is **greater than 144/94** (as per Canadian Physical Activity, Fitness and Lifestyle Approach Guideline) the candidate will be asked to sit and rest for 5 minutes. Following the rest period, the candidate’s blood pressure will be reassessed. If his/her blood pressure remains equal to or greater than 144/94, the candidate will be asked to have a physician complete the PARmed-x form or provide written clearance prior to the candidate participating in the testing. If the candidate’s blood pressure is below 144/94, he/she may proceed with the testing.

Is there any reason why you should/could not participate in the OLS-PPAT on this?

_____ Of _____, _____.
(Day) (Month) (Year)

No

Yes

If yes, please give reason:

Candidate Name (please print): _____

Candidate Signature: X _____

Fitness Parameters

In keeping with the National Occupational Competency Profile* (NOCP) for Paramedics, the test is comprised of 4 stations designed to simulate the various tasks and physical demands that accompany a standard emergency house call. Proper lifting form and safe body mechanics must be strictly adhered to at all times. Each station will be graded separately, and the candidate will receive a rating of “Successful” or “Unsuccessful.” Candidates are required to achieve a “Successful” rating for each test in order to proceed to the next test.

*NOCP Reference

3.1.e Exhibit physical strength and fitness consistent with the requirements of professional practice.

3.2.a Practice safe biomechanics

The candidate’s physical ability will be assessed in the following areas:

- Aerobic Fitness
- Hand Grip Strength
- Balance
- Overall Strength

Stations

Aerobic Fitness Assessment

Cardiorespiratory (aerobic) fitness is an important determinant of health. It strongly correlates with an individual’s ability to sustain physical effort over a period of time and ability to respond to emergencies.

We will be assessing the Paramedic candidate’s aerobic fitness with the utilization of the “**Modified Canadian Aerobic Test.**” The Modified Canadian Aerobic Fitness Test is designed to give information about the subject’s aerobic fitness, while using minimal equipment and minimal person-to-person contact.

Modified Canadian Aerobic Fitness Test (mCAFT)

The mCAFT is a multi-stage test used to estimate VO₂ max for ages 15-69 years. VO₂ max refers to the maximum amount of oxygen a candidate can utilize during work/exercise. It can give you important insights about a candidate’s cardiorespiratory fitness.

The candidate steps up and down on a platform, completing one or more 3-minute stages. The stage with which the candidate will start is based on the sex and age of the candidate (see table 1). The candidate will perform a 2-step (20.3 cm each step) sequence while listening to set cadences (see table 2).

Table 1 mCAFT Starting Stage

Age (years)	Female	Male
15-29	3	4
20-29	3	4
30-39	3	3
40-49	2	3
50-59	1	2
60-69	1	1

Table 2 mCAFT Cadence and Oxygen Cost

Sex		Stage							
		1	2	3	4	5	6	7	8
Female	Cadence	66.0	84.0	102.0	114.0	120.0	132.0	144.0	118.0*
	O ₂ Cost	15.9	18.0	22.0	24.5	26.3	29.5	33.6	36.2
Male	Cadence	66.0	84.0	102.0	114.0	132.0	144.0	118.0*	132.0*
	O ₂ Cost	15.9	18.0	22.0	24.5	29.5	33.6	36.2	40.1

Cadence in foot plants/minute. O₂ Cost in ml·kg⁻¹·min⁻¹.

**Single step (all others are double step).*

At the end of each 3-minute stage, the client's HR will be measured. The subject continues to the next stage if the heart rate is assessed to be under 85% of the predicted maximum heart rate (220-age). The test will end when/if the candidate:

- Reaches the ceiling heart rate (85% of 220-age)
- Asks to stop
- Shows signs of physiological distress
- Cannot maintain the cadence
- Completes stage 6

Scoring and Recording

1. Once the test is complete, the candidate's estimated VO₂ max will be calculated.
2. To be successful and move on to the next phase of testing, candidates will be required to attain a minimum VO₂ Max score. While Paramedic duties/tasks will not vary in difficulty based on the responding Paramedic's demographics, our use of the mCAFT is intended to serve as a means to measure overall health status rather than athletic prowess or job specific strength therefore, minimum acceptable cut-off scores will vary based on the age and sex of the candidate.

While any variance in difficulty assigned based on the age and sex of the candidate could suggest that the expectations are lowered for those candidates who would have otherwise had a poor performance, this is not the case. Statistically, the minimum standard becomes harder and harder as the age of the candidate increases.

Younger, non-diseased candidates are generally expected to have higher levels of physical fitness simply for the fact that they are young. The expectation is that a minimum standard should be easily achievable by most untrained, younger individuals. Comparatively, older candidates being tested would be expected to perform at a higher level than untrained individuals of similar age.

The following minimum standards (Table 3) will represent values that would be achievable ranging from the 5th percentile for 20-year-old females to the 80th percentile for 59-year-old males* (Table 4).

**Health Reports, Vol.30 10, pp. 14-22, October 2019 · Statistics Canada, Catalogue no. 82-003-X*

Table 3 mCAFT Minimal Standard

Sex	Male		Female	
Age	≤ 34 y/o	≥ 35 y/o	≤ 34 y/o	≥ 35 y/o
mL·kg ⁻¹ ·min ⁻¹	39	35	32	30

Table 4 VO₂ Max by Percentile

Age (years)	P5	P10	P20	P30	P40	P50	P60	P70	P80	P90	P95
Male	mL·kg ⁻¹ ·min ⁻¹										
16 to 17	40.5	42.0	44.0	45.7	47.3	48.8	50.4	52.0	53.8	56.0	57.7
18 to 19	39.1	40.7	42.9	44.7	46.4	48.0	49.7	51.5	53.4	55.8	57.6
20 to 24	36.8	38.5	40.9	42.9	44.7	46.4	48.3	50.1	52.2	54.9	56.9
25 to 29	33.7	35.6	38.1	40.1	42.0	43.8	45.7	47.6	49.8	52.7	54.9
30 to 34	31.2	33.1	35.6	37.6	39.4	41.1	42.9	44.8	47.0	49.8	52.0
35 to 39	29.5	31.3	33.7	35.6	37.3	38.9	40.6	42.4	44.4	47.1	49.3
40 to 44	28.2	30.0	32.3	34.1	35.7	37.3	38.9	40.6	42.5	45.2	47.3
45 to 49	26.6	28.5	30.8	32.5	34.1	35.6	37.1	38.8	40.7	43.3	45.5
50 to 54	24.1	26.0	28.4	30.2	31.7	33.2	34.7	36.4	38.3	41.0	43.3
55 to 59	21.2	23.1	25.5	27.3	28.8	30.3	31.7	33.3	35.3	38.1	40.4
60 to 64	18.9	20.7	23.0	24.6	26.0	27.3	28.6	30.1	31.9	34.5	36.8
Female	mL·kg ⁻¹ ·min ⁻¹										
16 to 17	36.8	38.1	39.6	40.8	41.8	42.8	43.8	44.9	46.4	48.5	50.4
18 to 19	35.9	37.2	38.7	39.8	40.8	41.7	42.7	43.7	45.1	47.1	48.9
20 to 24	34.5	35.8	37.3	38.4	39.3	40.2	41.1	42.1	43.4	45.3	47.1
25 to 29	32.3	33.6	35.2	36.3	37.3	38.3	39.2	40.3	41.7	43.7	45.5
30 to 34	29.7	31.1	32.8	34.1	35.3	36.3	37.5	38.7	40.2	42.5	44.5
35 to 39	27.0	28.6	30.4	31.9	33.1	34.3	35.6	37.0	38.7	41.2	43.3
40 to 44	24.7	26.2	28.1	29.6	31.0	32.3	33.6	35.1	36.9	39.5	41.7
45 to 49	22.6	24.1	26.0	27.5	28.9	30.3	31.7	33.2	35.0	37.5	39.6
50 to 54	20.8	22.2	24.1	25.6	26.9	28.3	29.7	31.2	33.0	35.4	37.4
55 to 59	19.3	20.6	22.4	23.8	25.1	26.4	27.8	29.3	30.9	33.2	35.0
60 to 64	17.9	19.1	20.8	22.1	23.4	24.7	26.0	27.4	28.9	31.0	32.7

Modified Canadian Aerobic Fitness Test (mCAFT) Score Sheet

Name:		Date:	
Age:	y/o	Sex:	M or F
Resting BP:	/ mmHg	Body Mass:	kg
Resting HR:	bpm	Predicted HRmax:	bpm
85% predicted HRmax:	bpm	85% predicted HRmax:	b/10 sec.
1st stage		HR:	bpm
2nd stage		HR:	bpm
3rd stage		HR:	bpm
4th stage		HR:	bpm
5th stage		HR:	bpm
6th stage		HR:	bpm

Note: An active recovery period of 2-5 minutes should immediately follow the mCAFT (e.g. a light pace walk).

Successful

Unsuccessful

Hand Grip Strength Assessment

Hand grip strength is widely regarded as a correlate to total body strength. Further to that, hand grip strength was found* to be highly predictive of future functional limitations and disability.

**Rantanen et al., 1999*

Observations made by our team in the field as well as in the simulated environment indicate that, often, it is not a Paramedic's or Paramedic candidate's overall ability to lift patients and related equipment that fails them but rather their grip that causes a negative patient (or simulated patient) event.

Hand Grip Strength Test

The candidate's hand grip strength will be assessed with the aid of a Hand Dynamometer. The candidate will grasp the dynamometer handle against the palm and between the thumb and fingers. The dynamometer will be adjusted to fit the candidate's hand. Each hand in turn, the candidate will squeeze the dynamometer handle with as much force as possible.

Scoring and Recording

The best scores for each hand will be combined for a total score in kilograms. To determine appropriate pass/fail cut-offs for male candidates and for female candidates, an average score was calculated using scores representing the 50th percentile* in age groups ranging from 18 years old to 65 years old.

*<https://www150.statcan.gc.ca/n1/pub/82-003-x/2016010/article/14665/tbl/tbl03-eng.htm>

Successful male candidates will achieve a combined score \geq **90 kgs**.

Successful female candidates will achieve a combined score \geq **54 kgs**.

Left Hand:	kg	Right Hand:	kg
Combined Grip Force:		kg	

Successful

Unsuccessful

Balance Assessment

Emergency scenes can vary greatly and therefore, the surfaces upon which a Paramedic is expected to move, and work can often be unstable, narrow, slippery, uneven etc. To help stave off the risk of injury, it is important that a Paramedic have a reliable ability to maintain balance on any of these surfaces. Because much of the Paramedic's gait movement occurs on one leg (e.g. taking a flight of stairs or walking), the candidate's balance will be assessed using the “**Unipedal Stance Test.**”

Unipedal Stance Test

The candidate will stand shoeless with eyes open, arms crossed over the chest and hands on opposite shoulders. The candidate will be asked to stand next to a sturdy object (for support in case of a loss of balance) and start the test by lifting the leg of their choosing and holding the elevated foot next to, but not touching, the ankle of the opposite leg. The candidate will be expected to hold the one-legged position for as long as possible up to 45 seconds. (test will be repeated with the opposite leg) Time ends when one of the following occurs:

- Arms uncross
- The elevated leg moves toward/away from the standing limb or touches the floor
- The weight-bearing foot moves to maintain balance

Scoring and Recording

The best time will be taken and compared to established means by age and sex (table 5). Successful candidates will attain a score \geq the corresponding mean for their age and sex.

Table 5 Mean Times in Seconds* (rounded to the nearest second)

Age (years)	Male	Female
18 – 39	43	44
40 – 49	40	40
50 – 59	38	36
60 – 69	29	25

*Springer et al, 2007

Left Leg:	seconds	Right Leg:	seconds
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Successful

Unsuccessful

Overall Strength Assessment

Patient lifts are an important and frequent part of a Paramedic's day-to-day work. There are many different types of patient lifts. Whether it be an extremity lift (fore aft lift), lifting a patient with a scoop stretcher or spine board or moving a patient up a set of stairs with a stair-chair, they all require overall strength and core stability. To assess the Paramedic candidate's overall strength and ability to lift and carry awkward loads, the candidate will perform the "**Squat, Lift & Carry Test.**" The Squat, Lift & Carry test will be administered with the aid of a 100-pound slam ball. The weight and of the ball is representative of the Paramedic's share of the load during a partner-assisted lift & carry of a 200-pound patient.

Squat, Lift & Carry Test

Using proper body mechanics, the candidate will squat down near the 100-pound ball, grasp the ball with both hands and while holding the ball close to the body, the candidate will move to a standing position. Once the load has been stabilized and is under complete control, the candidate will begin the carry portion of the test.

The candidate will carry the ball 10 feet to a platform where there will, under complete control, place the ball. The height of the platform will 50 – 55 cm. The height of the platform represents the approximate height of a Ferno ProFlex stretcher in the 3rd position from the ground.

Scoring and Recording

The candidate will be expected to be in control of the load at all times during the lift. The successful candidate will pick up the ball, carry it 10 feet to the designated platform and set it down under complete control with no stumbles or drops at any time during the whole process.

Notes:

Successful

Unsuccessful



OLS-PPAT

This is to certify that,

on _____,

Successfully Completed

OMNI LIFE SUPPORT'S PARAMEDIC PHYSICAL ABILITIES TEST



Examiner