Client Portfolio

FEAT. Mackensey Psaros

By Travis Pullan

PED 374

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Pre-Assessment

- Completed PAR-Q

- Completed Consent Form

Mackensey is in overall healthy condition, no underlying issues with her PAR-Q, up to current day still exercising and progressing. No Chronic Medical Conditions, Metal Health Issues, Respiratory Disease or current injuries.

Client Introduction

Mackensey is a 21 year old Woman.

She currently weighs in at 129 lbs & is 5’5”.

My client is a bodybuilder currently in a refeed stage post-show, therefore her weight will be fluctuating as per this segment of training. Right now in this refeed stage she is training 5 days a week and is performing light-moderate level Cardio at a total of 150 minutes per week.

CURRENT GOAL: ~ Maintain a relative LBM; put on minimal body fat % while increasing muscle mass.

Mackensey has NO health concerning conditions.

Lab 1 Introduction:

Measuring **Blood Pressure** is primarily important to determine the risk of **Cardiovascular Disease.**

If blood pressure is high, medication or lifestyle changes are recommended.

This is measured through Systolic & Diastolic units (mm Hg).

The difference of these two measurements is called the **Pulse Pressure** and **Mean Arterial Pressure (MAP)** is the artery pressure sustained if blood flow was not pulsating.

Lab 1: Resting BP / HR

Blood Pressure Results

RBP	110 / 78
Pulse Pressure	32 mm Hg
Mean Arterial Pressure	88.7 mm Hg

Heart Rate Results

Supine RHR	44 BPM
Standing HR	60 BPM

Lab 1 Analysis

Mackensey's Systolic Blood Pressure was considered "average" and her Diastolic Blood Pressure was considered "higher than average". She is in a very healthy range of Pulse Pressure / MAP as well.

Her Resting Heart rate was a very healthy range being at a low 44 BPM. This displays a healthy function which is likely due to her consistent exercise & diet regimen, her body is happy with the nutrient density she introduces through prep and the regular incorporation of moderate cardio / resistance training.

Lab 2 Introduction

What is **Body Composition?**

Body COmposition is the percentage of fat, bone, water and muscle in the human body.

BMI: Body Mass Index is a measurement of height and weight (kg x m2) which determines if someone is “OBESE” or “OVERWEIGHT”.

Body Composition can be measured by Skinfolds / Girth Measurements on the body. Through the 3 sites for Men / Women and the Waist to Hip ratio we are able to determine lbs of fat carried & body fat %.

Lab 2: Body Composition

Body Mass Index

BMI	**23.1 kg/m2**
Category Via. Table 23.3	**Normal**
Category Via. Table 23.4	**Average**
Percentile Via. Table 23.4	**25th - 74th %ile**
Body fat %	1.2 x 23.1 + (.23 x 20)-(10.8 x 0)-5.4 27.7 + (4.6) - 5.4 = **26.9BF %**

Girth Measurements

GIRTH MEAS.	Trial 1	Trial 2	Trial 3	AVG.	Category
Waist Girth (cm)	70 cm	74 cm	72 cm	**72 cm**	**Low Risk / Much lower than Average (Table 24.5)**
Hip Girth (cm)	94 cm	94.5 cm	94.5 cm	**94.5 cm**	
Waist to Hip Ratio				**0.75**	**Low Risk / Much lower than Average (Table 24.6)**

Lab 2: Body Composition cont'd

SKINFOLD MEASUREMENTS

SKINFOLD MEAS.	Trial 1	Trial 2	Trial 3	AVG's
Triceps	26 mm	25.5 mm	26 mm	26 mm
Suprailium	20 mm	19 mm	19 mm	19.25 mm
Thigh	29 mm	28.5 mm	29 mm	29.75 mm

Lab 2 Analysis

Mackensey's Body Mass Index / Body fat percentage was considered average or at a healthy weight. The body fat percentage seems off as it is quite high for her BMI status.

Her Girth measurements show that she is at low risk for any weight related concern or risk of cardiovascular disease.

Finally, Mackensey's Skinfold measurements result in her status being Average. This is a healthy range to be positioned in as she is at no risk of obesity or being overweight.

Lab 3 Introduction

What is an ECG?

An **Electrocardiogram** is a measurement of quality / quantity of heart beats.

These tests include heart rate, blood pressure and RPE (rate of perceived exertion).

The events occurring in the heart are noted by a **P WAVE, QRS COMPLEX & T WAVE.**

Lab 3 Resting ECG

Heart Rate	53 BPM
HR Assessment	Bradycardia
PR Interval	Normal
QRS Interval	Normal
Ectopic Beats	NONE
ST Changes	NONE

Lab 3 Analysis

Mackensey's results show Sinus Bradycardia, meaning her beat is slower than expected as it is a common cardiac rhythm with appropriate muscular depolarization.

This is results of any BPM <60. A normal rhythm would be anywhere between 60-100. It is not a serious condition unless you have any symptoms which include:

Chest pain, Dizziness, Fatigue... etc

Overall her ECG Results are quite normal and lies within majority of the normal ranges.

Lab 4 Introduction

The Anaerobic Cycling Test also known as the WAnT or Wingate Anaerobic Test is a supramaximal test when maximal oxygen uptake is the maximal reference point.

This test requires peak anaerobic power and it done in segments of 5 seconds. Results underlie the bodyweight ; KP level and how many times the client is able to spin the pedal beyond the mark on the cycle ergometer.

The test conducted was a maximum duration of 30 seconds.

Lab 4: Anaerobic Cycling

Rev. Max	11
Rev. Total	49
Peak Power	832 W
Total Work	18.5 kJ
Mean Power	617 W
Fatigue Index	46 %
Relative Peak	9.7
Relative Work	0
Relative Mean	7.2

Time (s)	Revs / segment
0-5 s	9
5-10 s	8
10-15 s	7
15-20 s	7
20-25 s	6
25-30 s	5

Lab 4 Analysis

Based on Mackensey's results through Absolute Peak, Relative Peak and Absolute Mean her scores are considered **Above Average.**

The revs per 5 second segment were quite consistent and you can see the slow drop towards the final stages. This shows me that she will be able to perform high intensity interval exercise throughout the provided prescriptions.

Lab 5 Introduction

Isotonic exercise is a dynamic movement consisting of concentric / eccentric muscle contractions.

The speed during Isotonic movements are dependant on lengthening or shortening the muscle.

This is depicted during 1RM Bench Press tests or indirect 1RM tests (rep ranges).

Lab 5: Isotonic and Isometric Strength

DIRECT 1RM

Absolute 1RM	**63.6 kg**
Relative 1RM	**0.94**
Category (abs.)	**Well above avg.**
Category (rel.)	**Excellent**

INDIRECT 1RM

Weight Lifted	**59.1 kg**
REPS	**5**
% 1RM	**88%**
Absolute 1RM	**76 kg**
Estimated 1RM	**71 kg**

Lab 5: Isotonic and Isometric Strength CONTd'

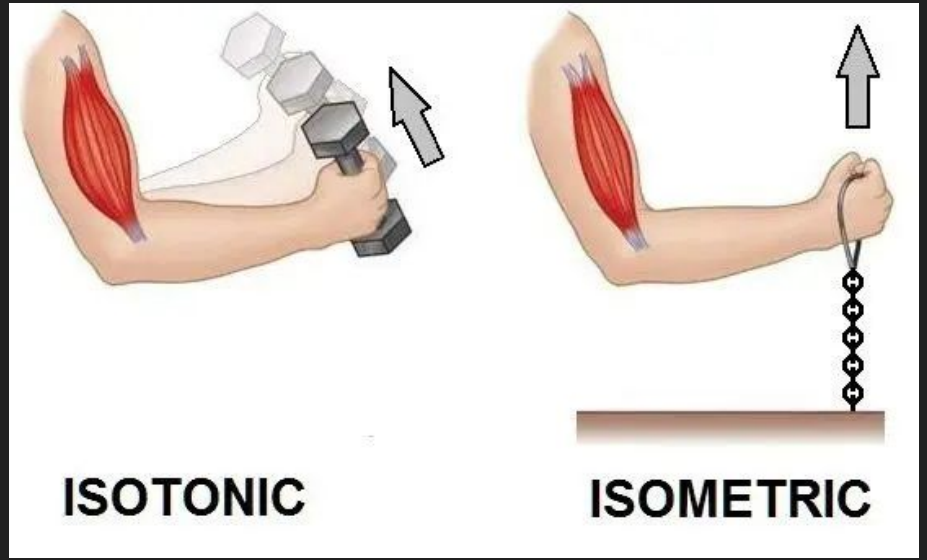
Right Hand Trials 1/2/3 (kg)	42.5 kg/44 kg/42 kg
Right Hand PR	44 kg
Left Hand Trials 1/2/3 (kg)	41.5 kg/41 kg/40 kg
Left Hand PR	41.5 kg
Absolute Strength	44 kg / 432 N
SUMS	44 + 41.5 = 85.5 kg / 839 N
Relative Strength	1.4 kg.kg-1 / 2.0 N.kg-1
Category (abs.)	Well above average
Category (rel.)	Well above average
Percentage Difference	9 %

Lab 5 Analysis

Mackensey, being a bodybuilder has well above average statistics for this lab.

This gives good leeway for the program prescription and she is very capable of continuing / increasing strength training adaptations and muscular fitness

Will be having new PR's in no time...



Lab 6 Introduction

The 3 popular field tests include the Rockport, Cooper and George test.

The **Rockport Walk Test** is a 1 mile walk at the participants fastest pace.

The **Cooper Run Test** is a 1.5 mile run (6 laps of a 400m track) or a 12 minute run.

The **George Jog** test is a 1 mile submaximal jog at a ~9:00 min/mile pace for women and an ~8:00 min/mile pace for men.

Lab 6 Aerobic Running

I would choose the **Cooper 1.5 mile run test** for my Client as she is in very good shape due to muscular endurance and she is meeting the minimum or more recommended MET-min per week of cardiovascular endurance.

My Client did not complete the Bruce Protocol test, if she were to perform this test I would estimate her results to be anywhere >/= 12:00 min.

This would have her estimated VO2 ranging >/=52.0 ml.kg.min

Lab 6 Results (Travis)

STAGE	Speed (mph)	Grade (%)	HR (bpm)	RPE (0-10)	VO2 (L.min)	Est. VO2	Energy (kcal.min)
1	1.7	10	68	0	1.4	16.3	7.1
2	2.5	12	88	0.5	2.5	24.7	12.9
3	3.4	14	96	4	3.4	35.6	17
4	4.2	16	104	6	4.2	47.2	20.9
5	5.0	18	118	9	N/A	52.0	N/A

Lab 7 Introduction

Anaerobic Power depends on our body's energy sources within muscle fibers being:

Adenosine Triphosphate and **Creatine Phosphate** / ATP CP

The two energy systems used in anaerobic activity are the **Phosphagen System** and the **Glycolytic System.**

Phosphagen System is used in segments of 5-15s, as we got to see with this lab with our Sprinters and the Glycolytic System is used in segments of 15-30 s minimum to 60 s. This is **Fast Glycolysis** producing energy required.

Lab 7: Horizontal Power

My Client did not complete this lab, if she were to perform this sprint I would estimate her time to fall in the 5-7 s range throughout the 40-60 yard sections as similar to myself she is fit but has short strides due to her height.

This would categorize her sprint for the 40 yard mark as **Above Average** or **Average.**

Lab 7 Results (Jordan)

Lab 7	40 yard	50 yard	60 yard	Mean	Category
Sprint Times	4.33 s	5.75 s	6.48 s	**5.52 s**	**40 yd.** **Well Above Avg**
Running Speeds	8.44 $m.s^{-1}$	7.94 $m.s^{-1}$	8.46 $m.s^{-1}$	**N/A**	**Power** **Average**
Horizontal Power	7039 W	8123 W	7056 W	**N/A**	**N/A**

Lab 8 Introduction

The Aerobic Stepping Test is a test oxygen consumption similar to the Bruce Protocol.

This is a span of 5 minutes stepping onto a platform or bleacher at the height of 15.75 inches for Men and 13 inches for Women.

This test measures Cardiorespiratory Endurance and was used as a screening test in the past for emergency personnel.

Lab 8: Aerobic Stepping

Recovery Pulse	**88 bpm**
Non-Adjusted VO2max	**67 ml.kg.min-1**
Age-Adjusted VO2max	**70 ml.kg.min-1**
Fitness Category	**Superior**
Firefighter Qualification (y/n)	**Yes**

Lab 8 Analysis

Mackensey showed Superior results as expected in this Aerobic Stepping test as she is very conditioned with light to moderate aerobic exercise due to er Cardio regimen.

She has a strong component of Cardiovascular Endurance therefore prescribing her Aerobic section of exercise will be much easier and contain solid progression.

Exercise Prescription: GOALS

My Client's goals include: (some repeat from Introduction)

- Increase Muscular Strength & Endurance slowly
- Maintain relative LBM
- Increase Lean Muscle Mass
- Maintain or Increase Aerobic Fitness

Exercise Prescription
Warm up / Cool down

MODE	Frequency	Intensity	Time	Type	Volume	Progression
Warm up / Cool down	Before / After Exercise	<40% HRR - ≤ 60% HRR	5-10 min	Aerobic & muscular activity, Transitional phase which allows body to adjust to changes	N/A	N/A

Transitional Exercises:

- Incline Walk @ 5% Grade / 2.5-3.0 MPH
- Light Bike
- Jump Rope

Exercise Prescription
Aerobic Activity

MODE	Frequency	Intensity	Time	Type	Volume	Progression
Aerobic Actiivty	3-5 days/week of moderate intensity exercise.	Moderate (40% to ≤ 59% HRR	30-60 min/day (≥150 min/week)	Aerobic exercise performed in a continuous or intermittent manner that involves major muscle groups	Target of ≥500-1000 MET-min/week Goal 10k steps/day	Increase 5-10 min as required depending on relative LBM

Exercise Prescription Anaerobic Activity

MODE	Frequency	Intensity	Time	Type	Volume	Progression
Anaerobic Activity	3 days/week of vigorous intensity	Vigorous ≥ (60-89% HRR)	15-60 s / exercise	Horizontal Power movements targeting major muscle groups Ie. sprints, ladder exercise, box jumps	Target HR zones 60-89% HRmax	Increase frequency as needed every 1-2 weeks, after one month gradually adjust upward

Exercise Prescription ENDURANCE

MODE	Frequency	Intensity	Time	Type	Volume	Progression
Resistance Exercise	5 days/week each major muscle group	60-70% of 1RM moderate to vigorous intensity focus on hypertrophy	Based on reps / sets ≥4 x 8-12	Resistance exercises involving major muscle groups, Multi joint exercises affecting more than one muscle group, Single joint exercises after multi joint.	High volume ≥ 10 sets / week	As strength adaptations occur, continue to subject greater stimuli for continued increases in muscular fitness

Exercise Prescription STRENGTH

MODE	Frequency	Intensity	Time	Type	Volume	Progression
Resistance Exercise	3 days/week each major muscle group	60-89% of 1RM moderate to vigorous intensity focus on strength	Based on reps / sets ≥3 x 6-8	Resistance exercises involving major muscle groups, Multi joint exercises affecting more than one muscle group, Single joint exercises after multi joint.	Med. Volume 5-9 sets / week	As strength adaptations occur, continue to subject greater stimuli for continued increases in muscular fitness

Exercise Prescription Flexibility

MODE	Frequency	Intensity	Time	Type	Volume	Progression
Flexibility	3-5 days/week Daily if soreness increases	Stretch to the point of feeling tightness or discomfort	10-30s hold per stretch	A series of flexibility exercises for each major muscle-tendon units is recommended. (Static, dynamic, ballistic, PNF)	Total of 90s of discontinuous total stretching time for each exercise	

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