

Carl Case Study - EP - FITT and PROS Program

Carl Case Study - Exercise Prescription - FITT and PROS Program

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Class EF310

Exercise Prescription using FITT Principles – Goal: To increase muscle strength, bulk appearance, and maintain ability for competitive intramural sports. The result will improve BMI to 24 (current 25.1 overweight range). A nutritional diet modification is seriously recommended for disease-free health.

What **frequency** do you suggest?

Cardiovascular activity	Muscular strength and endurance	Flexibility
The frequency of cardiovascular activity is preferably every day or minimum five days a week. This is based on the U.S. Fitness guidelines stating the more the better. Daily also important to develop a pattern of compliance.	The frequency of strength training is three to four, nonconsecutive days per week. The plan is every other day because of the intention to change appearance.	The frequency is three to four, nonconsecutive days per week.

What **intensity** do you suggest?

Cardiovascular activity	Muscular strength and endurance	Flexibility
To maintain a healthy weight and be stellar in intramural sports games, the recommendation for the intensity is the U.S. Fitness target for cardio exercise. The goal is to have both moderate and vigorous intensity of cardio training. The judgement of intensity is heart rate monitoring and relying on Carl's Rate of Perceived exertion (RPE) to determine intensity. Given the exercise induced asthma (EIA), the intensity should be no more than a rating of 15 (6-20 scale) and the rating should be based on the premise that there should be no pain in the chest. Exercise should not be continued with chest pain, especially given the EIA. The THR directly after vigorous cardio should be between 149-179 (220-21=199)*75%-90% The current VO2 max at 51.66 ml/kg/min	It is the primary goal to enhance appearance and gain muscular strength. We will initially, under supervision, concentrate on the upper body and abdomen strength, assuming the lower extremities are worked in cardio EP. Initially, we will find the high intensity of upper body weight lifting by determining the maximum weight in pounds that can be safely lifted eight times. This then becomes the weight used for beginning training. We are building upper body strength by performing one set for 8 repetitions. This is your	Having range of motion (ROM) or flexibility is the third key component of life long fitness. The ROM in joints prevents injuries such as lower back. The sit and reach test result of 15 is considered average for age 21, we recommend on doing exercises to balance with the strength and aerobic training. The intensity goal is to move to the better range of flexibility from the

<p>can be used to estimate the current HR of “140” for the 12 minute run test. The goal is to increase the level of intensity to the target range. The 12 minute run test with a heart rate max of 149-179 per minute for vigorous activity should be retested after 30 days.</p>	<p>high intensity training (HIT). The number of push-ups and crunches recommended, as many as possible, maximum 45 to start. While the YMCA bench press is said to be a “fair” rating, 15 reps is low and depending on the weight this number should be increased to “30” working toward the above average. It is necessary to review your diet to make sure your protein intake is sufficient to sustain the intensity and muscle building.</p>	<p>average range. We expect the sit and reach to become more intense at 17 inches, and the quadruplet can gradually increase reps overtime. The mad cat stretch is so good it can be done as long as it feels good and first thing in the morning is great.</p>
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What **time** do you suggest?

Cardiovascular activity	Muscular strength and endurance	Flexibility
<p>The amount of time is 300 minimum and 450 minutes for optimum results of long term cardiovascular health. This is based on U.S. guidelines and we feel greater than the 300 minutes is best. Given the time duration to cross campus for classes, during the school year, the 250 (five times 50 per day) minutes of time for briskly walking across campus is counted toward the total amount of 300-420 minutes. Scheduled running, in addition to the Saturday flag football games and rec center (approximate 115 minutes) is 85 minutes for a total of 200 minutes greater than moderate and a total of 450 minutes per week. Just 85 more minutes per week will create a habit of optimum, lifelong cardio fitness.</p>	<p>The initial work out is expected to take less than a half an hour of time each day of strength training. Especially when the free weights, crunches and pushups can be done at your apartment. As heavier weights are used with multiple sets and longer rests between sets, the time may increase slightly. Also the gradual move to the weight machine at the rec center may add more duration of time.</p>	<p>The amount of time is minimal given the benefits of life long healthy joints especially hips and spine. We estimate the time is less than ten minutes each day of flexibility training.</p>

What **type** of activity do you suggest?

Cardiovascular activity	Muscular strength and endurance	Flexibility
<p>The activity for the cardio exercise is both walking, running and the intramural bursts of run/sprint exercise. It is best to always have a long warm up thus, avoiding quick strenuous activity and possible constriction of the airways. Swimming would be a good possibility if a lap pool is available in the gym. Care should be taken to avoid exercising outside in cool, dry weather especially while a physician recommends an inhaler. The inhaler should be carried at all times.</p>	<p>Initially, free weights, the YMCA bench press, push-ups and crunches are recommended to develop the habit of strength training every other day. This is initially designed for ease compliance as the only equipment is free weights and the bench press can be added each time you are able to go to the rec center.</p>	<p>ROM exercises and core strength exercises can be varied overtime. The sit and reach, quadruped and the mad cat gives a good combination of ROM and mobility in hips and spine.</p>

See tracking sheet below

Exercise Prescription using PROS Principles

Explain how you will utilize the principle of **progression** for each component of fitness in your exercise prescription.

Cardiovascular activity	Muscular strength and endurance	Flexibility
<p>The main goal is to continuously and progressively increase the demands on the body and thereby have an ongoing impact on long term fitness. The intensity of vigorous running minutes will increase overtime which will add to the progression of demand and fitness on the heart as it continues to adapt. Additional easy cardio such as jump roping should be added for variety. You will no longer be largely sedentary during the week.</p>	<p>We are starting with free weights, push-ups and crunches. As the repetitions become easier, (less intensity), we will build up the weight (5-10%) and keep the reps the same. Gradually we will add multiple sets. As strength progresses weight machines are best for isolating specific muscles such as the lower body and can be added during times when you are able to make it to the rec center. This can be combined with free weights to add variety and make sure you are able to perform your strength training every other day. Overtime the progression adds isometrics, plyometrics, cross-fit, isokinetics, DCER and other types of training for variety and progression of muscle group strength.</p>	<p>The progression of ROM demand on the body increases overtime. The quadruped balance reps can increase to continue the demand on the body. As the spine becomes more limber, the sit and reach stretch will increase from 15, to 16 and 17 inches.</p>

Explain how you will utilize the principle of **regularity** for each component of fitness in your exercise prescription.

Cardiovascular activity	Muscular strength and endurance	Flexibility
<p>It is best to simply work the cardio every day. Use the form attached to monitor your progress as far as the type of exercise and add the minutes each day to total for the week. "Use it or lose it" is the mantra to live by.</p>	<p>The long term gains in muscle strength will be accomplished with becoming a habitual strength training guru. It becomes clock work to schedule this every other day for the best results in appearance and strength.</p>	<p>The mad cat and other flexibility and ROM exercises will feel so good you will look forward to them every other day. The mad cat can be done every day in the morning.</p>

Explain how you will utilize the **overload** principle for each component of fitness in your exercise prescription.

Cardiovascular activity	Muscular strength and endurance	Flexibility
<p>Over time the cardio systems becomes accustomed to the level of intensity and stress overload and it becomes necessary to change up cardio workouts and increase intensity. Currently you are less than HRMax (estimated based on VO2max to be 140) and initially we work to make sure you are in the HR range of minimum 149. As time goes on we continue to overload within the RPE of approx.15 to increase the HR after exercise to mid-point of the max or 164. As your heart is strengthened, you may feel so good with your workouts, you will want to increase more of the 450 total minutes per week to more vigorous activity.</p>	<p>To enhance muscular appearance and strength it is necessary to put the muscles in a stress beyond what you are accustomed to also known as "overload". So, as an example your body will become accustomed to the weight size you can perform to the level of 8 reps. Once you are easily able to perform the eight reps, we first perform them faster to add load and then we increase the weight to stress your chest and arms and back to feel at a peak weight with eight reps. As time goes on and we see your muscle definition, we will continuously change it up with weight machines, circuit work and other types of weight training to make sure the muscle groups continue to be stressed each work out.</p>	<p>The overload of flexibility continues to work on hip joints and spine for range of motion while staying safe. As time progresses, it would be great to start a trend on campus with your friends to begin to take or form a yoga class which will truly overload your flexibility by practicing poses and holding for longer and longer periods of time. I'm sure you can find a certified yoga instructor near your college campus.</p>

Explain how you the **specificity** principle applies to each component of fitness in your exercise prescription.

Cardiovascular activity	Muscular strength and endurance	Flexibility
<p>As the running, brisk walking and intramurals become more routine, it is suggested you see if you can enjoy swimming to mix it up a bit along with any other group activities at the rec center.</p>	<p>There are many progressive exercises as defined above to maintain your focus. We suggest working the large muscle group first for best results. Follow the SAID principle of, Specific Adaptations to Imposed Demands.</p>	<p>The quadruped and sit and reach are a start and as flexibility increases, we look forward to you starting a trend of men's yoga class on campus. Try it you might like it.</p>

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Physical Activity Form (adapted from Fitness Professionals Handbook)												
To be modified as tracking of strength training progression & overload adapt to Carl's determination and results												
Name	Carl	Month		Target	174	Target heart Rate Zone	- 149 to 179					
Target weight based on BMI 24, you have learned the benefits and agree losing weight contributes to appearance :)												
						bench						
						Pu/crunch	Measurements :					
Week	Cardio	Bod Wgt	Exer HR	RPE	Reps	triceps	Pecs	midaxilla	Subscaplula	abs	suprailliac	quads
Day 1	X	180	140	15	15/25/20	15	12	15	18	25	20	22
Day 2												
Day 3												
Day 4												
Day 5												
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Day 31												

Health and Human Services – retrieved from <https://www.hhs.gov/fitness/be-active/physical-activity-guidelines-for-americans/index.html>

Howley, E, Thompson, D., (2012). *Fitness Professional's Handbook, sixth edition.*