

# Example of fitness case study

[Health & Medicine](#), [Body](#)



- **Client's BMI**

$$\text{BMI} = 24.4$$

**BMI of the client is normal as it falls in between the category of normal weight.**

- Client's BMR

$$\text{BMR} = 10 \times \text{weight (kg)} + 6.25 \times \text{height (cm)} - 5 \times \text{age (years)} + 5$$

$$\text{BMR} = 1700.25$$

The minimum number of calories needed by the client to keep his body functioning are 1700.25.

- **Client's target heart rate at 60% and 80% using the Karvonen formula**

Minimum Training Heart Rate:

$$220 - 55 (\text{Age}) = 165$$

$$165 - 80 (\text{Resting Heart Rate}) = 85$$

$$85 \times 0.60 (\text{Minimum Intensity}) + 80 (\text{Resting Heart Rate}) = 131 \text{ beats per minute}$$

**Maximum Training Heart Rate:**

$$220 - 55 (\text{Age}) = 165$$

$$165 - 80 (\text{Resting Heart Rate}) = 85$$

$$85 \times 0.80 (\text{Maximum Intensity}) + 80 (\text{Resting Heart Rate}) = 148 \text{ beats per minute}$$

## **The training heart rate region of the client lies in from 131 to 148.**

### **Rationale for Testing**

The current fitness level of the client seems good as he has normal body weight and BMI that would be considered normal. The client is an athlete and active so more of his body weight is muscle rather than fat. Also, the body fat suggests that the client has healthy body fat percentage . The client doesn't need very rigorous training plan. As an athlete, the client must be strong and must have enough muscles to carry the career successfully. For this reason, the training regiment designed below consists of exercises that would not only help the client to increase the muscles but also to help gain strength.

### **Identifying training needs**

In describing the physical characteristics that contribute to success, focus should be on strength, physical size, power, speed, reactivity, quickness, agility, balance, movement skills, anaerobic capacity, coordination and body awareness, aerobic power. Therefore, keeping this in mind the client, who is an athlete and has been active on a daily basis, needs a training program that would work on enhancing his strength and endurance. The client needs a strength development training program that would help him react and respond to any unpredictable situation quickly because the ability to react quickly enhancing the efficiency of the client towards success. Furthermore, it would help him to develop strong muscles that could endure pressure built during the exercise or any other action that he make requiring sudden or harder movements.

training regimens

An exercise plan consist of 3 phase is planned according to the preliminary information giving about the client. Phase 1 is to be followed for 8 weeks which is a periodized exercise program of resistance training; Phase 2 for the duration of next 2 weeks is an overreaching cycle; and in the last for week 11th and week 12th Phase 3 is a taper.

### **Phase One:**

Exercises designed in first phase are three different workouts that utilize intensity, changing volume and resting intervals. These three workouts are to be rotated in Monday-Wednesday-Friday training, to be completed in a week for first eight weeks.

### **Monday:**

High bar close stance squats (15 reps, 3 sets)

Barbell Bench Press(15 reps, 3 sets)

Conventional Dead lifts (15 reps, 3 sets)

Dumbbell Shoulder Press (15 reps, 3 sets)

60 second rest (Rep Max)

### **Wednesday:**

Barbell Bench Press (6 reps in each of 5 sets)

Close Stance Squats (6 reps in each of 5 sets)

Dead-lifts (6 reps in each of 5 sets)

Note: Resting Time 3 min

Friday:

Close Stance Squats (6 reps in each of 5 sets)

Barbell bench Press (6 reps in each of 4 sets)

Weighted Pull Ups/Weighted Dips(6 reps in each of 4 sets)

Overhand Bent Over Row (6 reps in each of 4 sets)

Dumbbell Shoulder Press (6 reps in each of 5 sets)

Phase Two:

(Week 8 and 9)

This period is high training stress that possibly can result in muscular gains in a short term and also decrease in performance. After recovering from this phase of workout the results will be accelerated gain in size of muscles and strength.

Monday:

### **Conventional Dead-lifts (10 reps, 8 sets)**

Barbell Bench Press (10 reps, 3 sets)

High Bar Close Stance Squats (10 reps, 3 sets)

Overhead Bent-over Row (10 reps, 4 sets)

Dumbbell Shoulder Press (10 reps, 4 sets)

Note: Rest for 60 sec after each workout

Wednesday:

### **Barbell Bench Press (10 reps, 4 sets)**

Low Bar Shoulder-width-apart Squats (10 reps, 4 sets)

Conventional Dead-lift (10 reps, 4 sets)

Sumo Dead-lift (10 reps, 4 sets)

Barbell Shoulder Press (10 reps, 4 sets)

Seated Dumbbell Curl (10 reps, 4 sets)

Note: Take 60 sec rest after every workout

Thursday:

Barbell Incline Bench Press (12 reps, 4 sets)

Military Press (12 reps, 4 sets)

Leg Press (legs shoulder-width-apart)(12 reps, 4 sets)

Bent Over Row (12 reps, 4 sets)

Note: 60 sec resting time

Friday:

### **Squat (2 rep, 3 sets)**

Conventional Dead-lifts (2 reps, 3 sets)

Bench Press (2 reps, 3 sets)

Phase three:

This phase would allow the client's body to recover after phase 1 and 2 and also it will help in restoring strength and size at high level.

Monday:

### **Squats (4 sets, 10 reps)**

Dead-lifts (4 sets, 10 reps)

Push-ups(4 sets, 10 reps)

Bent-over Row (4 sets, 10 reps)

Note: 60 sec resting time

Wednesday:

### **Dead-lifts(3 sets, 10 reps)**

Squat(3 sets, 10 reps)

Bench Press(3 sets, 10 reps)

Note: 120 sec timed rest

Friday:

### **Dead-lifts(2 sets, 10 reps)**

Squat(2 sets, 10 reps)

Bench Press(2 sets, 10 reps)

Note: 120 sec timed rest

This training regimen is made to focus on the muscles of legs, lower back, glutes, and shoulders and aims to strengthen the whole body muscles. Also, client would be suggested to brisk walk for 40 minutes 5 days per week to keep the aerobics in to his training program.

Note: All these exercise are to be done only the suggested days per week as after strength training body needs rest and the muscles needs time to heal back in a stronger form.

### **Evaluate the success of the program in achieving its objectives**

Strength training would help the client to keep the fat off of the body and also this program will help the client to maintain the current body weight.

This resistance training is aimed to make the client fitter and stronger so he can achieve his athletic goals. And it is strictly suggested that the client must take some time to warm up before starting the exercises and cool down after strength training.

### **Nutritional Strategy:**

When a high motivated athlete goes for a competition the margin in between defeat and victory is typically small. When everything is fine, then nutrition

can make a great difference between winning and losing the game. Athletes are often concerned about the manipulations in the diet between the periods around competition . As the client is athlete so he should establish his nutritional goals and should translate them into his dietary plan so the achievement of these goals become easy. As, according to given information the body weight of the client needs no alteration except for little muscle gain. So to pair the strength training with nutritional strategy that would help him perform better and make his career long lasting, the client should focus on the intake of fluids, electrolytes, carbohydrates and proteins. The 75% of his diet should consist of proteins. White meat and protein shakes are advisable to make into a part of daily diet. Turkey, chicken, and fish are the most optimal options. This strategy would help the client in optimum recovery from the training program also will enhance the performance on the ground.

$$\text{BMI} = 17.21$$

### **BMI of the client shows that he is underweight.**

$$\text{BMR} = 10 \times \text{weight (kg)} + 6.25 \times \text{height (cm)} - 5 \times \text{age (years)} + 5$$

$$\text{BMR} = 1572.5$$

The minimum number of calories needed by the client to keep his body functioning as demonstrated by the BMR is 1572.5.

Minimum Training Heart Rate:

$$220 - 14 (\text{Age}) = 206$$

$$206 - 70 (\text{Resting Heart Rate}) = 136$$

$$136 \times 0.60 (\text{Minimum Intensity}) + 70 (\text{Resting Heart Rate}) = 151.6 \text{ beats per minute}$$



Maximum Training Heart Rate:

$$220 - 14 (\text{Age}) = 206$$

$$206 - 70 (\text{Resting Heart Rate}) = 136$$

$$136 \times 0.80 (\text{Maximum Intensity}) + 70 (\text{Resting Heart Rate}) = 178.8 \text{ beats per minute}$$

The training heart rate region of the client lies in from 151.6 to 178.8.

#### Rationale for Testing

The current fitness level of the client does not good or very desirable as he is underweight according to his calculated BMI that would be considered not normal. The client wants to take part into a sports of wrestling which would need him to gain muscles and the current situations indicates that the client would have to work hard and with determination for 12 weeks to get near to his goal. The body fat suggests that the client has very low body fat percentage. The client needs exercises and nutrition to gain muscles and also good fats to increase the body fat. It would help him to develop muscles and strengthen them over the period.

#### Identifying training needs

In describing the physical characteristics that contribute to success, the focus should be on strength, physical size, power, speed, reactivity, quickness, agility, balance, movement skills, anaerobic capacity, coordination and body awareness, and aerobic power of the individual.

Therefore, keeping this in mind the client who wants to join sports and has been not been active on a daily basis needs a training program that would work on enhancing his strength in muscles and help him gain muscles that would help him in fighting the opponent and gain control over his body. The

client needs a strength training program that would help him react and respond to any unpredictable situations quickly and with lightening speed because the ability to react quickly will help him enhance the efficiency towards success and better performance. Also, self confidence is very important a sportsman when getting in the field and as the client is very young he will gain confidence after following this training program which is designed in accordance with his young age.

training regimens

An exercise plan, consist of 2 phase, is designed according to the preliminary information giving about client. Phase 1 is to be followed for first 7 weeks, which is a periodic exercise program of resistance training as phase 2 that is to be followed for duration of next 5 weeks. The goal is to gain 20 pounds in next 3 months through exercise plan and correct nutrition diet.

Phase One:

### **Monday (full body exercises):**

Leg Curls (2 sets, 12 reps)

Leg Extensions (2 sets, 12 reps)

Squats (3 sets, 12 reps)

Bench Press (5 sets, 12 reps)

Bent-Over Row (2 sets, 12 reps)

Wide Grip Chins (1 set, till failure)

Close Grip Chins (1 set, till failure)

Hammer Curls (2 sets, 12 reps)

Note: 60 sec timed rest after each exercise

Tuesday (Body weight exercise):

Sit ups (4 sets, 20 reps)

Pushups (4 sets, 20 reps)

Chin ups (4 sets, 20 reps)

Note: 30 sec rest time after each set

Wednesday (Full Body workout):

Weighted Chin ups (4 sets, 10 reps)

Arnold press (4 sets, 10 reps)

Upright Rows (2 sets, 10 reps)

Seated Cable Rows (2 sets, 8 reps)

One Arm Rows (3 sets, 10 reps)

Wide Lat Pull-downs (4 sets, 10 reps)

Shrugs (3 sets, 15 reps)

Thursday:

**4th days of the weeks will be resting days to give muscles some relaxation.**

Friday (Full Body Workout):

Inclined Bench Press (4 sets, 12 reps)

Squats (4 sets, 12 reps)

Bench Press (4 sets, 12 reps)

Squats with 10 pounds dumbbells (2 sets, 12 reps)

Weighted Dips (2 sets, 12 reps)

Calf Raises (2 sets, 12 reps)

Shrugs (3 sets, 15 reps)

Front Plate Raises (3 sets, 12 reps)

Saturday:

Sit ups (4 sets, 20 reps)

Pushups (4 sets, 20 reps)

Chin ups (4 sets, 12 reps)

Sunday:

7th days of weeks will be rest days.

Note: 60 sec max rest time after every set of exercise in phase 1.

Phase Two:

### **Upper body workout:**

Bench Press (Warm up: 20 reps), (3 sets, 15 reps)

Barbell bent over row: (Warm up: 20 repetitions), (3 sets, 12 reps)

Seated shoulder press, (Warm up: 20 repetitions), (3 sets, 12 reps)

Standing barbell curl, (Warm up: 20 repetitions), (3 sets, 12 reps)

Close grip bench press (3 sets, 12 reps)

Lower Body Workout:

Squats (Warm up: 20 repetitions), (4 sets, 20 reps)

Leg Press (Warm up: 20 reps), (4 sets, 20 reps)

Stiff leg dead lift (Warm up: 20 repetitions), (4 sets, 20 reps)

Standing calf raises (Warm up: 20 repetitions), (4 sets, 20 reps)

Weighted incline sit ups (4 sets, 20 reps)

Note: perform 5 or 10 minutes of cardio that is light prior to each session.

The exercise sessions should not go beyond the limit of an hour as it is a high intensity workout for client of young age.

The client would be advised to also jog 3 to 4 times a week for 30 minutes on a moderate speed. This would help his legs get strong muscles. This will help the client to improve long term health, and increase his health and increase

his bone strength. The client is going to feel better and energized after the first session. He is suggested to do the slow reps, which would be better.

#### Nutritional Strategy:

It should be understood that to gain significant mass or muscle weight, client must eat 1 gram of protein per lbs of GOAL bodyweight that would be 20 pounds according to the height and age of the client, and three or four grams of carbohydrates per pound of the balance. Proteins will also help in repairing the broken muscles during intense workouts.

In order to bring improvement in a 14 year old child's weight it is necessary that a proper schedule should be followed. Giving high calorie and protein milk on regular basis will play an essential role for the health of a 14 year growing child. A proper meal chart must be followed in which after few hours' gap child must be taking something to eat. It is also necessary that the meal plan must be full of protein, whole grains and dairy items. It also essential that the child must be balancing the intake of food, and must be getting proper sleep to gain weight. The reason is that growing children needs proper diet along with physical activities and proper nap time. The use of protein-rich food in and dairy items in daily routine food shows prominent results. In protein-rich food the most effective and efficient weight gain items are skinless chicken, fish, beef, eggs, beans, and nuts.

It is suggested that processed food items must be avoided as these are not good for health. On the other hand, for whole grain items it is suggested that grains should be a part of a 14 years old meal and at minimum it must be 25 percent of a regular meal. In whole grain there must be whole-grain breads, brown rice, whole-wheat pasta, bulgur and quinoa. Similarly, in daily use of

dairy items such as milk twice a day and use of yogurt, cheese must also be a part of daily intake. In addition, it is also suggested that fruits and vegetable must also be there in the food intake schedule .

## References

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