

### 1) Who is a Certified Personal Trainer

A certified personal trainer is a fitness professional who is skilled and qualified to prescribe and teach exercises to healthy people and to people with medical problems but who have a medical clearance to exercise

### 2) What is Health?

Health is defined as a state of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity.

### 3) What is Fitness ?

Fitness or physical fitness (health related physical fitness) is defined as a set of attributes that people have or achieve that relates to the ability to perform physical activity. Physical fitness is all about being able to perform tasks of daily living with enthusiasm and alertness and having sufficient energy to enjoy leisure time activities and meet unexpected emergencies.

### 4) What is a Physical Activity?

Physical activity (PA): Physical activity is defined as any bodily movement which is produced by skeletal muscle contraction resulting in notable increase in energy expenditure and caloric requirement over the resting energy expenditure.

### 5) What is an Exercise?

Exercise: Exercise is defined as a planned and structured physical activity aimed at maintaining or improving one or more components of physical fitness (components of physical fitness are also referred to as bio motor variables of physical fitness).

### 6) What are the health related components of physical fitness ?

The components of fitness or bio motor variables of physical fitness are grouped into two categories as the

#### A) Health related physical fitness components

- 1) Cardiorespiratory fitness
- 2) Muscular fitness (strength and endurance)
- 3) Flexibility
- 4) Body Composition
- 5) Neuro-motor fitness

The health related components are the ones which are needed to perform activities of daily living (ADL) efficiently, prevent diseases and stay fit. These are the components or bio motor variables on which a fitness trainer is mainly going to focus on.

### 7) What are the skill related components of physical fitness ?

#### B) Skill related Physical Fitness Components

- 1) Agility
- 2) Coordination
- 3) Balance
- 4) Power
- 5) Reaction time
- 6) Speed

### 8) What will be your approach for a client for fatloss?

- a) Correcting the macro nutrient profile of meals (increase in protein, increase in good quality fats, reducing carbohydrates and refined and processed carbohydrates)
- b) Increasing and improving BMR by focussing on muscle gain with Resistance training
- c) Increasing energy expenditure via increased physical activity and cardiorespiratory endurance training
- d) Creating a calorie deficit if he is on a very calorie surplus diet

### 9) What is an average rep range for developing muscular endurance

- a) 15 - 20 reps per set not going to failure (or 20-25 reps in advanced clients). Could do 4-5 reps more easily. Having a RIR reps in reserve of 4-5

10) What is an average rep range for developing muscular hypertrophy

a) 12 - 15 reps per set going to failure - not all out failure. Could do 2-3 reps more. Having a RIR reps in reserve of 2-3 reps. For advanced clients a rep range of 8-15 reps per set. Progression would be to keep increasing the number of sets (exercise volume)

11) What is an average rep range for developing muscular strength

a) 8 - 12 reps per set going to all out failure. with a RIR rep in reserve of only one more rep (or 6-10 reps in advanced clients)

12) What is an average rep range for developing muscular power

a) For all out power or what we call slow speed strength, 4 - 8 reps per set going to all out failure (or 2-6 reps in advanced clients)

If we are targeting power - explosiveness (fast speed strength) then we will do explosive movements done very fast and explosively 3-6 reps per set.

13) What is the exercise recommendation for muscular fitness?

a) all major muscle groups should be targetted atleast two times per week on non consecutive days

14) What is the basic exercise recommendation for cardiorespiratory fitness

a) moderate intensity cardio for 150 minutes per week OR

b) energy expenditure of 1000kcal per week during cardiorespiratory exercise OR

c) a combination of moderate to vigorous intensity of cardio for 20-25 mins for 5 days per week

15) What is the basic exercise recommendation for flexibility component of fitness

a) stretching all major muscle-joint complexes for a minimum of 2-3 days per week And

Each muscle and joint complex to be stretched for 60 seconds as (20sec x 3) / (15sec x 4)

16) What is the basic exercise recommendation for neuromotor fitness

a) performing activities like yoga, tai chee, ladder-cone drills, functional training, activities for balance, stability, coordination and agility for 20-30 mins 2-3 times per week

17) Children should not do weight training as it will stunt their height growth

False

Height is a genetically predetermined character. Weight training does not stunt or retard height growth. As a matter of fact a good training stimulus and proper nutrition will only help the child to achieve his genetic potential and maybe even grow better than that.

18) Women should not do weight training as it will make them look very manly and muscular

False

Women lack the male hormone testosterone which helps men to build up so much muscle. However hard and however intense a woman trains, physiologically it is not possible for a woman to develop muscles like men and look muscular like a muscular man.

19) To make the body look more toned around waist, hips and abdomen,

False

There is nothing as Spot reduction



Exercises targetting muscle gain and fat loss should be done to make the body look more toned

20) Blood Pressure values

Blood Pressure Category	Systolic BP in mm of Hg	Diastolic BP in mm of Hg
Normal	Less than 120	Less than 80
Elevated	120-129	
High Blood Pressure / Hypertension	130 and above	80 and above

21) Blood Sugar values

	Fasting Blood Glucose (FBG)mg/dl	Post- Prandial Blood glucose mg/dL	HbA1c (%)
Normal	60-99	< 140	4 to 5.6
Impaired Glucose Tolerance(Pre Diabetes)	100 – 125	140-199	5.7 to 6.4
Diabetes	126 or more	200 or more	6.5% or high

A quick revision  for all my dear fitness professionals 

1)  
**Exercise Name**

↴

# SQUAT

**Joint Action**

↴

Hip flexion and extension.  
Knee - flexion and extension.

**Joint Action during Concentric phase**

↴

Hip - extension  
Knee - extension.

**Muscles working**

↴

Hip - extension by

Gluteus maximus and Hamstrings (semimembranosus, semitendinosus, long head of biceps femoris).

Knee - extension by

Quadriceps femoris and ITB (Ilio-tibial band)

Quadriceps femoris

(vastus medialis, vastus lateralis, vastus intermedius and rectus femoris).

2)

**Exercise Name**

↴

## BENT OVER ROWS.

**Joint Action**

↴

Shoulder - Extension and flexion

Elbow - flexion and extension.

**Joint Action during Concentric phase**

↴

Shoulder extension and

Elbow flexion

**Muscles working**

↴

Shoulder extension done by

Latissimus dorsi

Teres major

Posterior deltoid

Long head of triceps

Elbow flexion done by elbow flexor group ( biceps brachii, brachioradialis and brachialis )

3)

**Exercise Name**

↴

## LATERAL RAISES

**Joint Action**

↴

Shoulder Abduction and

Shoulder Adduction.

**Joint Action during Concentric phase** ↴

Shoulder Abduction

**Muscles working**

↴

Middle head of deltoid and

Supraspinatus

4)

**Exercise Name**

↴

# DEADLIFT

## Joint Action

↴

Hip - flexion and extension  
Knee - flexion and extension.

## Joint Action during Concentric phase

↴

Hip - extension  
Knee - extension.

## Muscles working

↴

Hip - extension by  
Gluteus maximus and Hamstrings (semimembranosus, semitendinosus, long head of biceps femoris).

Knee - extension by  
Quadriceps femoris and ITB (Ilio-tibial band)  
Quadriceps femoris  
(vastus medialis, vastus lateralis, vastus intermedius and rectus femoris).

5)

## Exercise Name

↴

# DYNAMIC LUNGES

## Joint Action

↴

Knee - flexion and extension of leading leg.  
Hip - flexion and extension of leading leg.

## Joint Action during Concentric phase

↴

Knee - extension and  
Hip - extension of the leading leg

## Muscles working

↴

Knee - extension by  
Quadriceps femoris and ITB (Ilio-tibial band)  
Quadriceps femoris  
(vastus medialis, vastus lateralis, vastus intermedius and rectus femoris).

Hip - extension by  
Gluteus maximus and Hamstrings (semimembranosus, semitendinosus, long head of biceps femoris)

PELVIC STABILIZATION OF THE NON LEADING LEG - by Gluteus medius and minimus of the non leading leg

6)

## Exercise Name

↴

# OVERHEAD PRESS

## Joint Action

↴

Shoulder - vertical aBduction and adduction. Elbow - extension and flexion

## Joint Action during

↴

Concentric phase :  
Shoulder Vertical aBduction and  
Elbow extension

## Muscles working

↴

Shoulder vertical aBduction done by anterior deltoid and Elbow extension -  
Triceps brachii and  
Anconeus.

7)

## Exercise Name

↴

# INCLINE BENCH PRESS

## Joint Action

↴

Shoulder - Horizontal adduction and horizontal abduction. Elbow - Flexion and extension

## Joint Action during

↴

Concentric phase :  
Shoulder Horizontal aDduction  
Elbow extension

## Muscles working

↴

Shoulder horizontal adduction -  
Anterior deltoid,  
Pectoralis major,  
long head of biceps brachii,  
coracobrachialis.  
Elbow extension -  
Triceps brachii,  
Anconeus.

8)

## Exercise Name

↴

# FLAT BENCH PRESS

## Joint Action

↴

Shoulder - Horizontal adduction and horizontal abduction. Elbow - Flexion and extension

### **Joint Action during**

↴

Concentric phase :  
Shoulder Horizontal aDduction  
Elbow extension

### **Muscles working**

↴

Shoulder horizontal adduction -  
Pectoralis major,  
anterior deltoid,  
long head of biceps brachii,  
coracobrachialis.

Elbow extension -

Triceps brachii,  
Anconeus.

9)

### **Exercise Name**

↴

## **STANDING CABLE PUSH DOWNS**

### **Joint Action**

↴

Elbow - Extension and flexion  
Shoulder - Flexion and extension

### **Joint Action during Concentric phase**

↴

Elbow extension and  
Shoulder flexion

### **Muscles working**

↴

Elbow extension done by triceps brachii and  
anconeus.

Shoulder flexion done anterior deltoid, long head of biceps brachii, coracobrachialis, clavicular part of pectoralis major.

10)

### **Exercise Name :**

↴

## **BENCH PULL**

### **Joint Action :**

↴

Shoulder horizontal aBduction and horizontal ADduction.

Elbow flexion and extension.

**Joint Action during Concentric phase :**

↴

Shoulder horizontal aBduction and  
Elbow flexion

**Muscles working :**

↴

Shoulder Horizontal aBduction done by  
Posterior deltoid,  
Long head of triceps.

Elbow flexion done by elbow flexor group (biceps brachii, brachioradialis and brachialis).  
11)

**Exercise Name :**

↴

## CLOSE GRIP BENCH PRESS

**Joint Action :**

↴

Elbow - Extension and flexion  
Shoulder - Flexion and extension

**Joint Action during Concentric phase :**

↴

Elbow extension and  
Shoulder flexion

**Muscles working :**

↴

Elbow extension done by triceps brachii and  
anconeus.

Shoulder flexion done anterior deltoid, long head of biceps brachii, coracobrachialis, clavicular part of  
pectoralis major.

12)

Exercise Name

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## WIDE GRIP / PRONE GRIP LAT PULLDOWN

**Joint Action**

↴

Shoulder - adduction and vertical aBduction.  
Elbow - flexion and extension.

**Joint Action during Concentric phase**

↴

Shoulder - ADduction  
Elbow - Flexion.

**Muscles working**

↴



Shoulder - adduction by  
Latissimus dorsi,  
Teres major,  
Posterior deltoid,  
Long head of triceps.

Elbow flexion done by elbow flexor group ( biceps brachii, brachioradialis and brachialis)

### Viva Questions for Practical 1

#### 1. Squats

- a. Why squat is structural exercise?
- b. Benefit of doing squats?
- c. Difference between front squat and back squat?
- d. What is the progression of squat from rank beginner to advance client?
- e. What is the difference between low bar and high bar squat?
- f. If client doesn't have flexibility to hold the clean grip while doing front squat, what type of grip you will teach?

#### 2. Lunges

- a. Explain 4-5 basic variation of lunges?
- b. When will you teach lunges to your client?
- c. Benefit of doing lunges?
- d. What type of lunges will you teach to the person who is doing lunges for the first time?
- e. A lunge is unilateral or bilateral exercise?

#### 3. Deadlift

- a. Which type of grip will you use for deadlift? Why?
- b. Why we do deload deadlift first when we teach deadlift?
- c. Difference between sumo and conventional deadlift?
- d. Explain different types of deadlifts?
- e. Deadlifts are for low back or lower limb exercise or it's a complete body exercise? Explain?
- f. At what level will you start teaching deadlifts to your client? (beg. / int. / adv.)
- g. What exercises will you suggest at the beginner level to strengthen the low back before progressing to the deadlift?

#### 4. Bent over Barbell row

- a. What type of grip will you use in Bent over Barbell Row? And why?
- b. How should barbell travel throughout the exercise? Why?
- c. Low Back should be arched or neutral in Bent over Barbell Rows?
- d. Scapulae should be retracted or neutral in Bent over Barbell Rows?
- e. Why we choose barbell first and the dumbbell later in Bent over Barbell Rows?
- f. Why only two step walk back from the racking position in Bent over Barbell Rows?
- g. Back should be parallel or slightly above parallel in Bent over Barbell Rows?
- h. What exercises will your suggest if your client is not able to hold neutral spine in bent over position?
- i. At what level will you start teaching Bent over Barbell row to your client? (beg. / int. / adv.)

#### 5. Over Head Barbell Press

- a. Explain the progression from Beg. To Adv. For overhead BB press?
- b. If we do DB overhead press, what would be better way standing or seated?
- c. Difference between Overhead BB press, Push press, and Push jerk?
- d. If client doesn't have flexibility to use clean grip and un-rack the bar, how will you teach overhead press?
- e. What is the maximum error on the core muscle people do when they perform OHP?

