

# Biomechanics in Physical Education

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**Abstract –** During the early 1970s. The international community adopted the terms Bio- Mechanics to describe the application of mechanical principles in the study of living organisms. As it was realized after 1950 that the mechanical principles involving on the human body is entirely different from other things. Internal forces and take place under the effect of external forces eg. When we walk. A background of mechanics can help coaches to know their sport more, make them more confident about their practice and extent their knowledge beyond the technique to know the scientific reason. They will be better prepared to answer- Why we do it this way? Why should not I do this way? – Student deserves better answer than because as a coach- I said.

- What technique is the best?
- Should I teach this technique to my students or it is suitable only for top class Athletes ?
- What is wrong with this individual's performance and how can I correct it.
- What exercise should I prescribe to improve this individual's physical condition?

The Bio-mechanics has derived from two words-Biomechanics. Bio means, something pertaining to living being or life. Mechanics -means, the discipline which studies the movement of object/motion of objects with the help of mechanical principles. Mechanics is a branch of physics which study the object/ from mechanical point of view. So, the knowledge of Bio-mechanics used to study and analysis the movement of living things. Any object is moving, it depends upon the resultant of various forces acting on the body.

## INTRODUCTION

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## MEANING OF BIO-MECHANIC

When the study of mechanics is limited to living structure, especially the human body, it is called Bio-mechanics.

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Bio means, something pertaining to living being or life.

Mechanics -means, the discipline which studies the movement of object/motion of objects with the help of mechanical principles.

Mechanics is a branch of physics which study the object/ from mechanical point of view. So, the knowledge of Bio-mechanics used to study and analysis the movement of living things. Any object is moving, it depends upon the resultant of various forces acting on the body.

### Definition of Bio-mechanics

"The area of study where the knowledge and methods of mechanics are applied to the structure and function of the living human system"

"Bio-mechanics is the science concerned with the internal and external forces acting on a human body and the effects produced by these forces".

### Definition

### KINESIOLOGY

"It is a field of study based upon the anatomical and mechanical analysis of human motion".

### - HAY & REID

### MECHANICS

"It is that branch of physics concern with the effect that forces have on bodies and the motion produced by these forces".

### - WELL

### BIO-MECHANICS

"Science concerned with the internal and external forces acting on a human body and the effects produced by these forces".

### - JAMES G. HAY

The term biomechanics refers to -

"Mechanical bases of biological especially to the Muscular activity and the principles and the relations involved there in".

### -WEBSTER'S INT.DICTIONARY

The application of Mechanical laws of living structures, specially to the loco motor system of human body".

### Definition of Bio-Mechanics

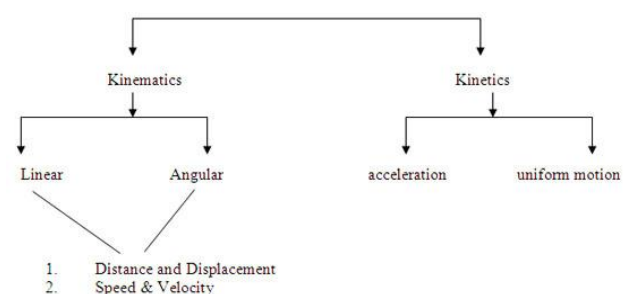
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## BIO-MECHANICS IN PHYSICAL EDUCATION, SPORTS & RESEARCH

1. Diagnostic technique
2. Diagnostic Coaching
3. Reference system development (as result IBM)
4. Comparative Research (Reference system)
5. Applied Research (Other form of Research applied)
6. Experimental Research (Compute simulation technique)
7. Development of basic fundamental movements
8. A organization of development of motor abilities
9. Development of efficient sport techniques
10. B.M application help posture development
11. Development of sport equipment and facilities (acceptance of new equipments & changes in rules)
12. BM application with regards to specific spent-medicine problems.
13. BM-contribute-body knowledge of sports-or theory of sport training.

### Bio-mechanics



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