WHAT'S UP WITH EXERCISE SCIENCE?

What is it, why is it important?

WHAT ARE THE LIMITS OF HUMAN PERFORMANCE?

- Is it possible to run the 100 meters in 9 seconds?
- Will it ever be possible to throw the discus over 300 feet?

How will you help your athletes improve their performance. How do you maximize each person’s abilities? Exercise science.

- Distance running. Genetics, training, culture? Can we use this information to train our athletes?

- Look at the clothing.
- Changes also in the body position
- Equipment: bent poles, longer skis that are more stable, but harder to turn.
- Importance of biomechanics. How best create velocity? Using a windmill motion, using hips and shoulders to add torque. Muscles or technique?

Changes over the past 20 years with strokes, breast stroke-more dolphin like movement butterfly-swimmers stay underwater longer and kick with no arms
- swim flumes are being used to measure acceleration and motion
- Pocket Hercules-4'7", 130 lbs. Total weight-500 lbs. Only certain body types for power lifting? Maybe not.

- cricket-old sport
- snow boarding-new sport (X games)
- motocross on bicycles - the equipment, helmet designed to dissipate force, new techniques
• **What about the disabled?**

• **Wheelchairs for sports – new materials, positioning**

• **Biomechanics and prosthetics have opened up many opportunities**

• **Physiology is a branch of the biological sciences concerned with the function of organ systems. The study of physiology depends on anatomy, biochemistry, and molecular biology**

• **Exercise physiology is a branch of physiology that deals with the functioning of the body during exercise.**

• **Definite physiological responses to exercise depending on FREQUENCY, INTENSITY, TIME (duration) AND TYPE (mode) – (FITT).**

• **How many plan to teach and coach? Do you need exercise science?**

• **evaluating your athletes**

• **training them to improve their performances**

• **How many plan to go into physical therapy, nursing or other health care professions?**

• **Improving the condition of the patients**

• **Understanding the physiological processes and the changes that occur with training are essential to anyone hoping to improve performance of patients or athletes and everyone in between.**