

# **The Science of Training & Conditioning**



**Illinois High School Association  
STEROID USE & YOUNG ATHLETES**

# Why Use Supplements?

- ◆ Increase Strength
- ◆ Increase Speed
- ◆ Increase Power

**How Are You Doing That Now?**



# Success Lies In Your Training...

◆ Most high school athletes **DO NOT** perform the necessary training activities to improve their sporting prowess...

◆ Change This & You **WILL** See Results.  
Ergogenic Aids Are Not Necessary



# Strength Training Facts

## True or False

**The best way to increase your strength is to lift heavy weights.**



# Strength Training Facts

**FALSE!**

**Especially in the beginning of a training program, loads of all sizes will serve to increase your strength... often exponentially.**



# Strength Training Facts

## True or False

**In order to see gains in size and strength, you must train as often as you can.**



# Strength Training Facts

**FALSE!**

**Strength and size gains are only created while you rest. The Central Nervous System is easily fatigued and unless you provide for adequate recovery, you will not see the gains you are looking for.**



# Strength Training Facts

## True or False

**Lifting heavy weights is far more important than understanding and eventually perfecting lift technique.**



# Strength Training Facts

**FALSE!**

**Technique development and adherence will not only keep you injury free, but it will also allow you to become much stronger over time.**



# Strength Training Facts

## True or False

**The best way to warm-up prior to lifting is to stretch and take a few lighter sets on the exercise you are going to perform.**

A silhouette of a person in a starting crouch on a track, positioned to the left of the text.

# Strength Training Facts

**FALSE**

**Although stretching helps promote tissue quality (and therefore injury resistance), when warming up you have to consider other factors such as joint movement and dynamic range of motion.**



# Strength Training Facts

## True or False

**The best way to track your progress is by testing your maximum lift capability every few weeks or months.**



# Strength Training Facts

**FALSE**

**Technique development and adherence is a far greater issue with respect to your development. By tracking your ability to perform a lift correctly, you reduce the risk of injury and provide a foundation to increase strength dramatically in the future.**



# Technique Development

◆ Develop weight room technique like you would on-field technique – treat it like a skill.

◆ Break exercises down movement by movement and learn to fire in the appropriate muscles



# Skill Sets...

◆ Every exercise can be broken down into skill sets. Once taught and learned, they will guide you safely through any exercise.

◆ The following slides break the squat into its skill sets.



# Squat – The Ultimate Exercise

## Skill Set

- 1) Set Your Feet – ensure that your feet are shoulder width apart or slightly wider. Your stance should feel comfortable with weight equally distributed on both feet.

# Squat – The Ultimate Exercise

## Skill Set

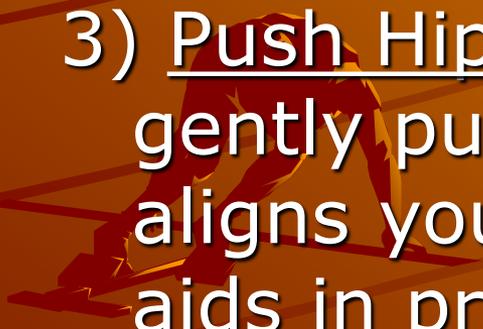
2) In-Steps Off – slightly push your weight to the outside of your feet. Don't lift your arches off the ground, but gently and evenly make sure that your weight is riding along the outside of your shoes. This will allow for the proper muscles to contract during the squat and guard against your knees coming in.

A small, semi-transparent image of a person in a dark shirt and shorts performing a squat on a track. The person is in a low, wide stance with their feet positioned towards the outside of their feet, demonstrating the 'In-Steps Off' technique.

# Squat – The Ultimate Exercise

## Skill Set

3) Push Hips Back – Before you descent, gently push your hips back. This action aligns your spine more appropriately and aids in preventing back related injury.

A person is shown in a squatting position, leaning forward with their hips pushed back, demonstrating the technique described in the text. The person is wearing dark clothing and is positioned on a light-colored floor.

# Squat – The Ultimate Exercise

## Skill Set

- 4) Eyes Up – Set your eyes up on the wall or mirror to at least the level of your head. This prevents you from looking downward during your squat, which would cause your shoulders to drop forward and your back to bend.
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- A small, semi-transparent image of a person in a squatting position is visible in the background on the left side of the slide. The person is wearing dark clothing and is captured in a low, wide stance with their feet flat on the ground and their back straight.

# Work Together...

- ◆ Work with your teammates and learn the proper technique of each exercise before you start trying to maximize the load.
- ◆ Challenge each other, not in how much you can lift, but in how well you can perform a lift.



# Speed Training Facts

## True or False

**By running repeat sprints which make you tired, you are training speed.**



# Speed Training Facts

**FALSE**

Properly improving speed is based primarily on increasing strength. During sprint training work, if you reach the point of fatigue or your legs start to feel tired, you are no longer training speed – you are training lactic acid tolerance which *inhibits* speed.



# Speed Training Facts

## True or False

**By not taking a backward step (often called a 'false step') you are increasing your speed forward.**



# Speed Training Facts

**FALSE**

**That backward step (actually called a 'plyo-step') is a natural neurological function that should be practiced and perfected – it actually increases your speed!**



# Speed Training Facts

## True or False

**Performing agility cone drills will serve to improve your agility.**



# Speed Training Facts

**FALSE**



Just like strength training exercises, coaches must teach you the skill of how to navigate through the cones – not simply go through them as fast as you can. This promotes bad habits which serve to decrease agility!

# Speed Training Facts

## True or False

**Speed and agility can be taught.**



# Speed Training Facts

**TRUE**

**The ability to run fast and be agile is a skill – just like the ability to squat a lot of weight. If time is not taken to teach these skills, than the results will be mediocre. When speed and agility skills are taught, however, even the slowest athlete can become faster.**



# Understand The Realities...

◆ Speed and agility are not necessarily 'in-born' talents that you either possess or don't possess. They can be taught and improved upon.

◆ Becoming stronger will dramatically improve your speed all on its own.



# Before You Take Drugs...

- ◆ The point of this was to show you that strength, speed and power gains are all possible when the proper application of training and conditioning is used.
- ◆ Don't even consider taking expensive and potentially harmful drugs if you haven't objectively committed to learning as much about strength & conditioning as you can
  - You'll be surprised at how much stronger and faster you can get even without drugs.

# Additional Information

- ◆ Persons interested in more information on this topic can contact:

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