

# Can consistent education in the outreach/high school setting improve knowledge/behavior?

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## Question/s:

Does knowledge or lack of knowledge regarding nutrition affect behaviors in high school athletes, coaches, and school staff?

## CQI SUMMARY

### RESULTS: Nutrition

- 15% improvement in knowledge based questions
- 11.75% increase noted in positive behaviors
- Significant improvements in decreased sodas and non-fruit/vegetable snacks consumed per day
- See Bar Graph Below

### Topics Identified

- Nutrition-11/06/2007-1/15/2007
- Lightning-2/15/2007-currently ongoing
- Hydration
- Warm-up and Stretching
- High School Coaches Symposium-3/31/2007

### Topic Information

- 2 of the 4 topics presented to the high school athletes and staff
  - Nutrition and Lightning Safety
- 1 of 4 topics were analyzed using pre and post tests
  - Nutrition
- 4 of 4 presentations were created on the above topics
- Coaches Symposium was held on March 31<sup>st</sup> to provide injury prevention techniques to area high school coaches

**Quick, Healthy Food Choices:**

**Breakfast:**

- Whole grain cereal with skim or 1% milk
- Banana, apple, peach, orange
- Bagel with low-fat cream cheese
- Pancakes with lite syrup
- Low-fat muffin
- Low-fat pop tarts
- Yogurt
- Oatmeal

**Snacks:**

- Granola/cereal bar
- Popcorn (low-fat)
- Whole grain crackers
- Baked tortilla chips and salsa
- Trail mix/ mixed nuts
- Low-fat pudding/yogurt/Jell-O
- Apple, banana, berries, grapes
- PB & J on whole wheat
- Veggies/dip (low-fat)
- Graham crackers
- Dry cereal (Life, Cheerios)
- Applesauce
- Pretzels

**Where to find good sources of:**

- **Carbohydrates:** whole grain bread/cereal, wheat crackers, pasta, potatoes, oatmeal
- **Lean Protein:** chicken, fish, turkey, beans
- **Fiber:** whole grain bread/cereal, broccoli, oatmeal, nuts, beans, apples, oranges, bananas
- **Fat (unsaturated):** Almonds, peanut butter, salmon, tuna, peanuts, walnuts
- **Iron:** Baked beans, spinach, liver, hard-boiled eggs, lean beef, chicken (dark meat)

**Fast Food Choices:**

- Baked potato
- Deli-sandwiches
- Grilled Chicken Sandwich
- Pizza with veggie toppings
- Muffins and bagels
- Fruit cup/yogurt parfait
- Salad with veggies and low-fat dressing
- Fruit juice

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## LIGHTNING SAFETY

**LIGHTNING QUICK FACTS**

- A single stroke of lightning carries 125,000,000 volts of electricity. That's enough to power a 100 watt light bulb for 3 months... or seriously harm or kill someone!
- There are 100,000 thunder storms in the United States each year with over 20 million lightning strikes from them.
- Your chances of being struck by lightning in the United States are 1 in 600,000.
- A lightning strike can heat the air in a fraction of a second. When air is heated that quickly, it expands violently and then contracts, like an explosion that happens in the blink of an eye. It's that explosion of air that creates sound waves, which we hear and call thunder.
- Lightning always produces thunder. When you see lightning but don't hear any thunder, the lightning is too far away for the sound waves to reach you.

**WHEN DO WE CLEAR THE FIELD?**

- Postpone or suspend activity if a thunderstorm appears imminent before or during a practice or game (regardless of whether lightning is seen or if thunder is heard) until the hazard has passed.
- Signs of imminent thunderstorm activity include darkening clouds, high winds, and thunder or lightning activity.
- Have a means of monitoring local weather forecasts and warnings.
- Designate a safe shelter for each venue.
- Use the flash-to-bang count to determine when to go to safety. By the time the flash-to-bang count approaches 30 seconds all individuals should be inside a safe structure.
- Once activities have been suspended, wait at least 30 minutes following the last sound of thunder or lightning flash prior to resuming an activity or returning outdoors.

**WATCH OR WARNING?**

**WATCH:** Tells you when and where severe weather is more likely to occur due to "favorable" conditions. Watches can quickly turn to warnings so keep an eye on the conditions in your area by tuning into weather channels or radio.

**WARNING:** Issued when severe weather has been indicated on radar or reported by observers in the area. Warnings indicate danger is likely to life and property to those in the path of the storm.

**LIGHTNING SAFETY**

- A safe location is any substantial, frequently used building. The building should have four solid walls (not a dug out), electrical and telephone wiring, as well as plumbing, all of which aid grounding a structure.
- The secondary choice for a safer location from the lightning hazard is a fully enclosed vehicle with a metal roof and completely closed windows. It is important to not touch any part of the metal framework of the vehicle while inside it during ongoing thunderstorms.
- It is not safe to shower, bathe or talk on landline phones (cell phones are allowed) while inside a safe shelter during thunderstorms.
- Avoid being the highest point, in contact with, or in proximity to the highest point in an open field. Also avoid being on the open water. Do not take shelter under or near trees, flagpoles, or light poles.
- Assume the lightning safe position for individuals who feel their hair stand on end, skin tingle, or hear "crackling" noises.
- **Lightning safe position:** crouched on the ground, weight on the balls of the feet, feet together, head lowered, and ears covered. **DO NOT LIE FLAT ON THE GROUND**

**WHAT IS FLASH TO BANG?**

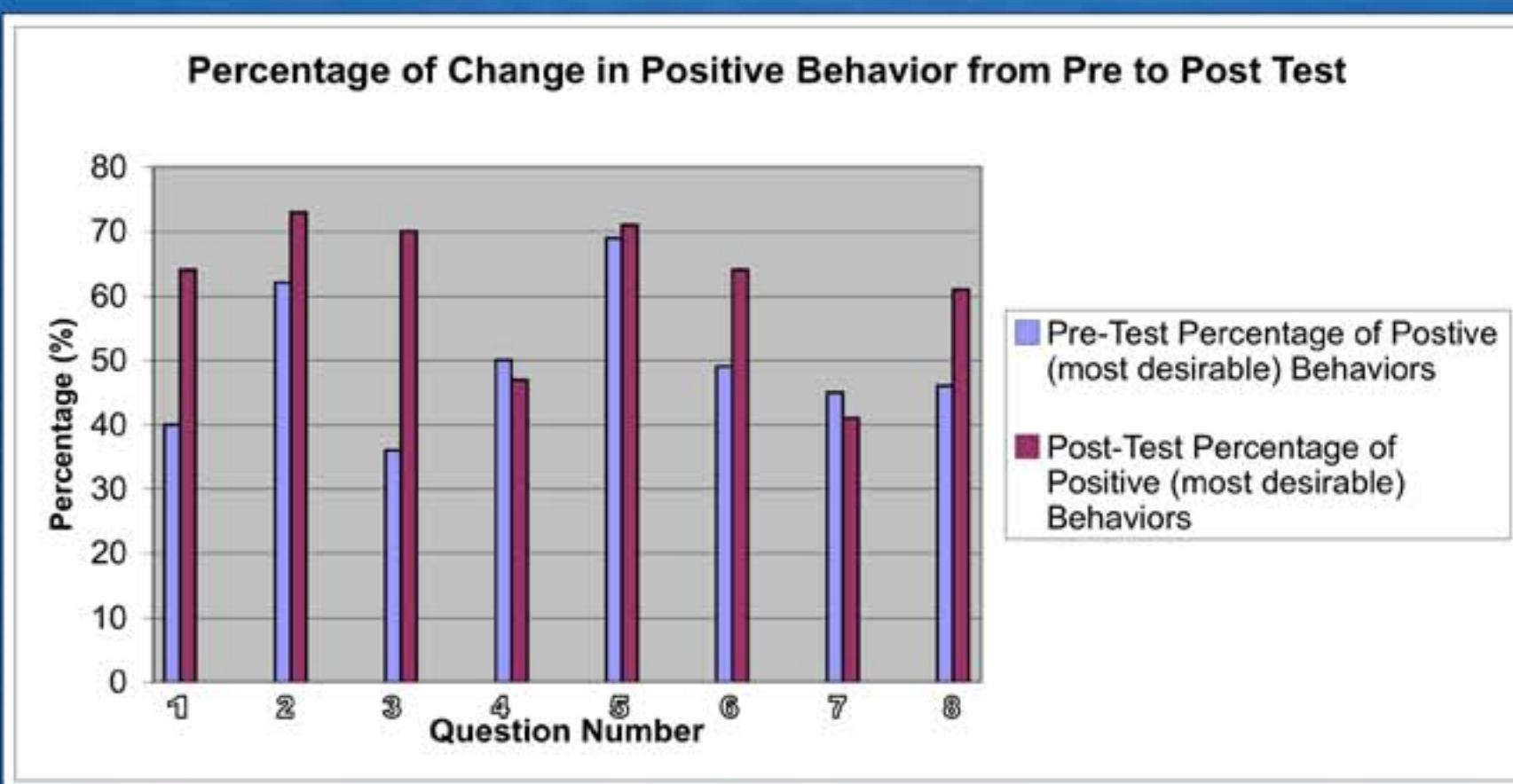
- To use the flash-to-bang method, begin counting when sighting a lightning flash.
- Counting is stopped when the associated bang (thunder) is heard.
- Divide this count by five to determine the distance to the lightning flash (in miles).
- For example, a flash-to-bang count of thirty seconds equates to a distance of six miles.
- Lightning has struck from as far away as 10 miles from the storm center.

**IF YOU HEAR IT, CLEAR IT; IF YOU SEE IT, CLOSE IT**

**BASIC FIRST AID FOR VICTIM**

- Survey the scene for safety.
- Activate local EMS.
- Lightning victims do not "carry a charge" and are safe to touch.
- If necessary, move the victim with care to a safer location.
- Evaluate airway, breathing, and circulation. Begin CPR if necessary.
- Evaluate and treat for hypothermia, shock, fractures, and/or burns.

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### Nutrition Pre and Post Test

**Knowledge**

- Which of the following foods provide a good source of carbohydrates?
  - Chicken
  - Whole grain bread
  - Broccoli
  - Hamburger
- Which of the following foods provides a good source of lean protein?
  - Chicken
  - Whole grain bread
  - Broccoli
  - Hamburgers
- Which of the following vegetable provides a good source of fiber?
  - Peas
  - Carrots
  - Broccoli
  - Tomatoes
- How many servings of vegetables should you eat each day?
  - 1-2
  - 2-3
  - More than 5
  - Every 6 hours
- To maintain a constant energy level, how often should you eat?
  - Once daily
  - Every 3 hours
  - 3 times daily
  - Every 6 hours
- Nutritional food labels list the daily allowance for calories. Should an athlete consume more or less calories per day than the average person?
  - More
  - Less
- Which method of cooking is healthier?
  - Fried
  - Grilled
- Do fast food restaurants offer healthy food?
  - Yes
  - No

**Behavior**

- How many non-fruit or non-vegetable snacks do you consume in a given day?
  - 1-3
  - 4-6
  - 6-8
  - 9 or more
- How many servings of sweets do you consume in a given day (candy bars, cookies, candy, etc)?
  - 1-3
  - 4-6
  - 6-8
  - More than 8
- How many sodas do you drink in a given day?
  - None
  - 1-3
  - 4-6
  - More than 6
- How long before a game do you eat your pre-game meal?
  - < 1 hour
  - 1-2 hours
  - 3-4 hours
  - I don't eat pre-game
- Do you take nutritional supplements?
  - Yes
  - No
- How many energy drinks do you consume in a given day?
  - None
  - 1
  - 2
  - More than 2
- How many times a week do you eat breakfast?
  - Every day
  - 4-6 times
  - 1-3 times
  - Never
- Do you wait to eat until you are hungry?
  - Yes
  - No



### High School Coaches Symposium

Presented by Vanderbilt Sports Medicine  
MARCH 31, 2007

**SCHEDULE**

- 7:15 Registration/Breakfast
- 8:00 Opening Remarks / Introduction  
Karl Swartz, MD  
Professor & Vice Chair, Orthopaedics  
Director, Vanderbilt Sports Medicine & Orthopaedics PCC  
Head Team Physician, Vanderbilt University
- 8:15 Conclusions  
B. Bruce Cook, MD  
Assistant Professor, Orthopaedics & Rehabilitation  
Team Physician, Vanderbilt University
- 8:35 Prevention of Ankle Injuries  
Thomas F. Ryan, MD  
Clinical Instructor, Orthopaedics & Rehabilitation  
Team Physician, Vanderbilt University
- 8:55 MRSA/Slap Infections  
Bobby Green, MD  
Assistant Professor, Public/Preventive Disease  
Pediatric Clinical Research Office
- Break
- 9:15 Overuse Injuries in the Lower Extremity  
Gene A. Huxel, MD  
Assistant Professor, Orthopaedics & Rehabilitation  
Team Physician, Vanderbilt & Belmont Universities
- 9:30 Prevention of Upper Extremity Injuries in the Throwing Athlete  
James C. Keener, MD, MPH  
Assistant Professor, Orthopaedics & Rehabilitation  
Chief of Shoulder Surgery  
Team Physician, Vanderbilt University
- 10:10 Supplementation/Nutrition  
Andrew Gregory, MS, FAAP, FACSM  
Assistant Professor, Orthopaedics & Rehabilitation  
Assistant Professor, Pediatrics  
Program Director, Pediatric Sports Medicine Fellowship  
Team Physician, Vanderbilt & Belmont Universities
- 10:30 Proper Fitting of Football Equipment/  
Helmets and Shoulder Pads  
Brian Coulter, E.M.C.  
Head Equipment Manager  
University of Alabama at Birmingham
- 10:50 Break
- 11:05 Wrist and Finger Injuries  
Paul J. Rimmer, DO  
Assistant Professor  
Team Physician, Vanderbilt University
- 11:25 Thrower's Program  
Andrew B. Dunn, MD, MPH  
Assistant Professor, Orthopaedics & Rehabilitation  
Assistant Professor, General Internal Medicine  
& Public Health  
Team Physician, Vanderbilt University
- 11:45 In-Season Conditioning and Weight Lifting  
Curtis Turner, DCC  
Assistant Coach, Strength and Conditioning Coach  
Vanderbilt University
- 12:05 Questions / Closing Remarks
- 12:10 Tour of VOl
- 12:30 Lunch

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### Next Steps:

- Analyze Lightning Pre and Post Tests
- Present Hydration information starting on 8/1/2007
- Handout pre and post tests for Hydration from 8/15/2007-8/31/2007
- Analyze Hydration data starting on 9/1/2007
- Present stretching information on 11/15/2007
- Handout pre and post tests for Stretching from 12/1/2007-12/20/2007
- Analyze Stretching data starting on 1/5/2008
- Plan High School Coaches Symposium for the Spring of 2008