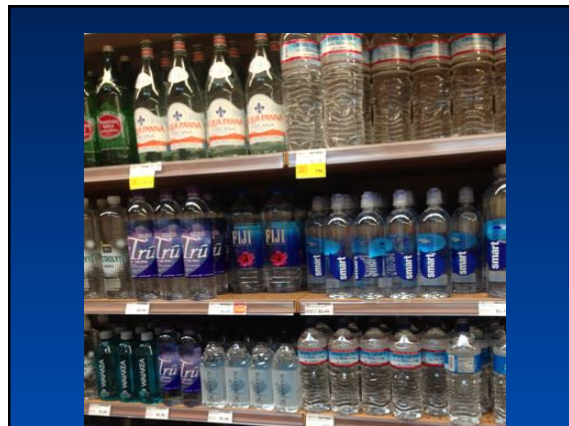
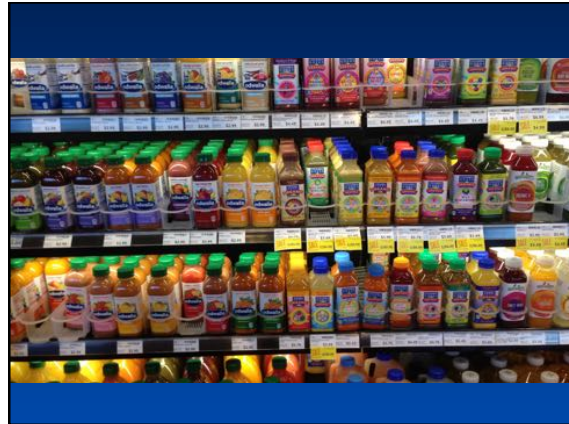


## Hydration, Electrolytes, Sleep



Wendy Sterling, MS, RD, CSSD  
STERLING NUTRITION



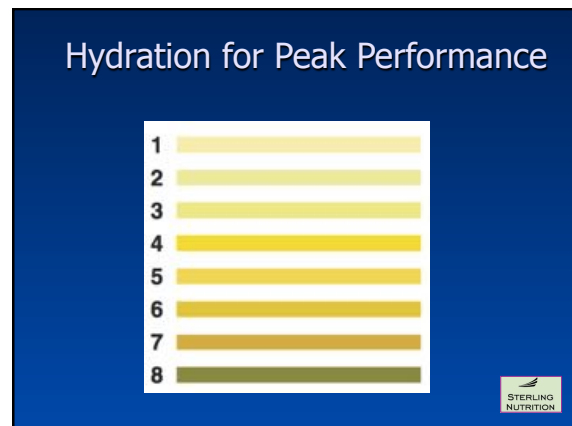
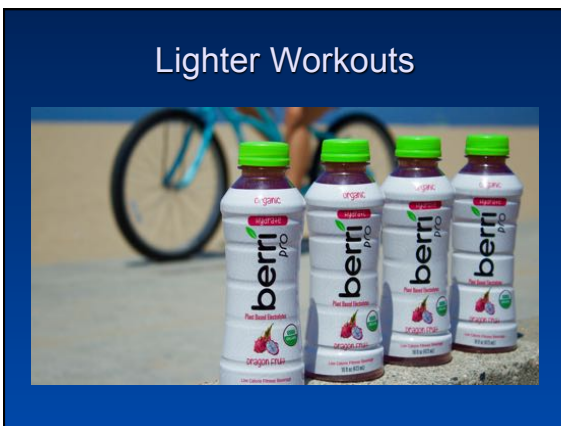
What should you drink?

## Hydration



**Can be a  
game changer**

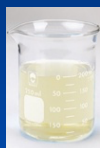




## Hydration for Peak Performance

### Check for hydration:

- Thirst not reliable
- Urine volume and color
- Urine should be pale yellow



## Hydration for Peak Performance

### Check for hydration:

- Urine "specific gravity" tests



## Hydration for Peak Performance

### Check for hydration:

- Weight:
  - Pre - Practice: 110 pounds
  - Post - Practice: 108 pounds
- Goal: Weight-neutral



## Hydration

### Goal: Half your body weight in fluid ounces



Example: 140 lbs  
Consume 70 fl oz.

~ 8- 9 cups



## How much?

### 2 hours Before:

16 oz. water/sports drink

### 5-10 min Before :

4-8 oz. water/ sports drink

### During Exercise: (every ~15/20 min):

4-8 oz water/sports drink

~20 oz/hour

### After Exercise:

24 oz Fluid per 1 lb body weight lost

## Cramping

"Severe, spreading, sustained, sharply painful muscle contractions that can sideline athletes."





## Cramping

- Hot conditions
- Heavy sweater
- Dehydration
- Carbohydrate depletion



## Prevent the Cramp

- Fluids
- Sodium
- Potassium
- Calcium



## Add sodium to the diet if:

- You are a heavy sweater
- You are losing more than 2% of your weight during practice
- Practice > than 1 hour
- Cramping (during/after a workout)
- Hot sunny day



## Prevent the Cramp - Sodium



Food	Amount	Sodium
• Salt	1 tsp.	2400 mg
• Pretzels (twist)	10	500mg
• Tomato Juice (V8)	1 cup	880 mg
• Gatorade	20 oz.	270 mg
• GatorLytes	1pkt	770 mg
• Tomato Sauce	½ cup	750 mg
• Seasoned bread crumb mix	½ cup	1056mg

## Prevent the Cramp - Sodium



Food	Amount	Sodium
• Canned chix. noodle soup	1 cup	1106 mg
• Teriyaki Sauce	2 T	1380 mg
• Pickle	1 lg, sour	1631 mg
• Tuna, canned in water	3 oz.	320 mg
• Turkey, roasted	3 oz.	750mg
• Turkey Bacon	1 oz.	650 mg
• Italian Dressing	2T	550 mg

## No wonder Matthew Dellavedova was cramping, all he does is drink coffee

WRITTEN BY MATTHEW SCHWERHA POSTED: 06/10/2015, 08:38AM

After another fantastic performance in Game 3 of the NBA Finals, Matthew Dellavedova found himself in the hospital with severe cramping.

## Teas, Coffee



30-80mg



120-150 mg



160 mg



420 mg



60mg



90mg



208mg



~10mg



160 mg

## Dangers of Caffeine

Energy drinks in teenagers linked to higher risks of strokes, heart palpitations, seizures and sudden death – particularly in children and teens with other underlying health problems like diabetes, heart disease, hyperactivity.

- *The Journal of Pediatrics*

## CAFFEINE

- Non-nutrient, we do not need it
- 75% kids drink caffeine daily
- More caffeine → less sleep
- Increased blood pressure
- Jitters, increases nervousness
- Diuretic → fluid loss → cramping
- Banned in NCAA
- Withdrawal → irritable, low energy
- After 2pm, ruins REM sleep



## Are you sleep deprived?

- Does a heavy meal, warm room, boring meeting or a lecture like this ever make you drowsy?



STERLING  
NUTRITION



## Are you sleep deprived?

- Does a heavy meal, warm room, boring meeting or a lecture like this ever make you drowsy?
- Do you fall asleep instantly at night?
- Do you need an alarm clock to wake up?
- Do you repeatedly hit the snooze button?
- Do you sleep extra hours on the weekends?

(yes to any 2 → sleep deprived)



## Research on Sleep/Weight

Number of hrs of sleep	Likelihood of becoming obese
< 4 hours of sleep	73% more likely to be obese than 7-9 hr sleepers
5 hours of sleep	50% more likely
6 hour sleep	23% more likely



## Best diet?

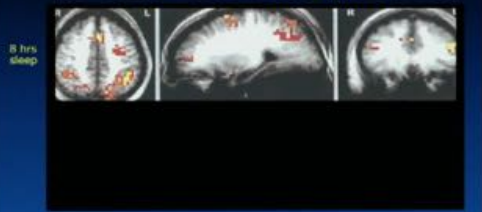
Getting one more hour

# SLEEP

## A lack of sleep in adolescents can cause:

- ✓ Poor performance at school or work
- ✓ Difficulty focusing on specific tasks
- ✓ Mood disturbances
- ✓ Irritability
- ✓ An increased risk of motor vehicle accidents
- ✓ Acne and other skin problems
- ✓ Weight gain

## Effect of sleep deprivation on brain activation (math)



## < 6 hrs sleep, 4x more likely to get a cold



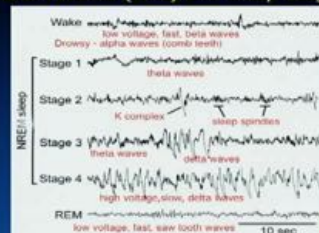
## Sleep

- Energy
- Motor skills and coordination
- Concentration, Memory
- Handling of complex tasks
- Decision-making skills
- Overall health, weight
- Mood



**GOAL: 9.25 hours**

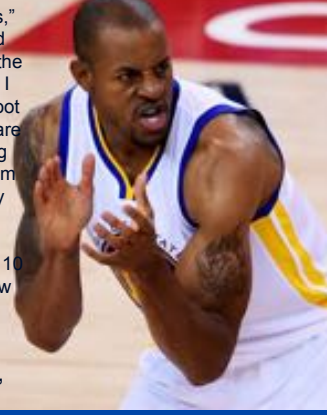
## Brain Waves (EEG) and Sleep Stages



- 11 year NBA Vet
- Watched TV until early morning hours
- 3-4 hour nap midday
- Stanford sleep expert
- Set bedtime
- "Electronics detox"
- Breathing exercises



"I started changing habits," Iguodala explained... "I'd wake up on game day in the morning to practice, and I started noticing better shoot arounds. My teammates are like, 'Man, you're making some shots today,' and I'm thinking to myself, 'They have no idea I've been going to sleep!' I start getting confident. It's 9 or 10 in the morning, but I know I'm going to have an amazing game tonight. Sleep good, feel good, play good."



## Andre Iguodala Attributes Strong Play To Better Sleep Cycles

"Sleep good, feel good, play good."

Juliet Spies-Gans  
Editorial Fellow, HuffPost Sports

Posted: 10/20/2015 10:12 AM EDT



Golden State Warrior Andre Iguodala celebrates winning the Bill Russell Finals MVP award and the 2015 NBA title during his team's championship parade last June.

## Ways to Improve Sleep

- Establish a regular sleep/wake schedule
- Get continuous sleep
- "The Power Nap" - ~30 min
- Dark, cool, uncluttered room
- Pillow should fold back
- No LED clock
- No iPad, TV, phone in the bed
- Bedtime ritual: bath, stretching, reading

