Nutrition For Teens

"The better the diet, the better the athlete"

Jennifer Day, R.D.

Food is Fuel

- Athletes need a diet rich in carbohydrates to fuel their bodies.
- Carbohydrates provide energy for exercise.
- A balanced diet is essential for athletes.
- Athletes should eat foods high in carbohydrates before and after exercise.

Protein supplements

- Protein is essential for muscle growth and repair.
- Athletes should consume protein-rich foods or supplements to support muscle recovery.
- Protein supplements can be in the form of whey, casein, or plant-based sources.

Post-Exercise

- It's important to refuel within 30 minutes after exercise.
- Meals should include carbohydrates and proteins.
- Protein shakes and bars are convenient options for athletes.

Caffeine

- Caffeine is a stimulant that can improve alertness and endurance.
- Athletes might use caffeine to enhance performance.
- However, excessive caffeine intake can lead to side effects such as increased heart rate.

Caffeine

- Caffeine is found in coffee, tea, and some soft drinks.
- Athletes should monitor their caffeine intake to avoid potential side effects.

Sports Drinks

- Sports drinks provide carbohydrates and electrolytes for energy and hydration.
- Athletes should consider their fluid needs and choose drinks accordingly.

Supplements

- A well-balanced diet is the foundation of nutrition, but supplements can be beneficial for some athletes.
- Considerations for supplement use vary based on age, gender, and activity level.

Side Effects

- Athletes should be aware of potential side effects of their supplements and consult a healthcare professional if necessary.

Recommendations for teens

- A nutritious diet is important for overall health and performance.
- Athletes should focus on a balanced intake of macronutrients and micronutrients.
- Regular physical activity and adequate rest are crucial for recovery.

Creatine

- Creatine is a supplement that can improve athletic performance.
- Athletes should be aware of potential side effects and consider their health status.

Side Effects

- Creatine supplementation can lead to gastrointestinal discomfort and muscle cramps.
- Athletes should start with a low dose and gradually increase to avoid side effects.

Wrap it Up

- Athletes should prioritize a balanced diet and consider their individual needs.
- A nutritionist can provide personalized advice to help athletes achieve their performance goals.

Prezi
Nutrition For Teens

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**Food is Fuel**

- Most sedentary adults 2,000-3,000 calories
- Active teen girls need 2,200-3,500 calories
- Active teen boys 3,000 - 5,000 calories

- *Not just being more active, they are growing!*

**Need snacks throughout the day to boost calories**

**Backpack friendly snacks**
- Trail mix
- PB and crackers
- Granola bars
Female Athlete Triad

Consuming too few calories to support exercise

- Body goes into survival mode to preserve energy

- Hormone imbalance
  - Irregular menstruation
  - Increased bone turnover (stress fractures)
  - Musculoskeletal injuries
Signs and Symptoms

- Menstrual dysfunction
  >3 months without menstruating
- Stress fracture
- Low index of energy availability
  - energy left for the body after exercise
  Need to know BF%
  kcals eaten per day
- Poor body image

<45 kcals/kg free fat mass body weight per day is at risk

82% female runners at USU were <45 kcals per kg

Need prevention early
Prevention

High school is the time to educate female athletes

• If females are participating in sports, their energy needs will be higher

• First indicator is loss of menstruation
  
  Loss of period is not normal
  Need to go to parents/coaches/doctor
  Increase intake until menstruation returns

Menstruation can return in as little as five days when intake is increased
Recommendations for teens

- Whole grains
- Low-fat dairy (bones)
- Protein (diet)
- Fruits/Vegetables
- Eat breakfast
- Avoid fast food/fried foods for school lunch
- Avoid empty carbohydrates/sugary drinks
- Avoid energy drinks

• Have to be in a state of energy balance for next few steps to work
Pre-exercise

"Energy phase" - prepping the body, like fueling a car

2-3 hrs before practice - light snack is helpful
  - 1/2 turkey sandwich, apple with pb, handful almonds, high protein energy bar
  - 1-2 glasses of water

<1 hr before practice - few bites provide added energy
  - 2-3 crackers, string cheese
  - 5-10 ounces of water
    - 1 oz = mouthful

Wouldn't want to set out on a trip with the gas tank empty on your car - same for prepping the body for exercise
During Exercise
"Maintenance"

Provide energy to sustain long, strenuous physical activity

- Energy beans, gu - marathons, cycling
- Not recommended for teens

Fluids

- Water should be consumed in small amounts every 15-20 minutes
- If exercise exceeds 1 hour, sports drink
Post-Exercise
"Refuel"

<30 minutes after practice - refuel and replenish

Optimal time -
- muscles are in a starved state
- increased blood flow to muscles
- muscle is more sensitive to insulin
  - improved ability to digest glucose

Allows muscles to rebuild
- enhanced muscle recovery

Combination of carbohydrate and protein works better than carbohydrate alone

50 grams of carbohydrate with 10-15 grams of protein =

- small chocolate milk
- apple juice and PB&J sandwich
- 2 cups cornflakes 1 cup milk
- Small yogurt
Post-Exercise Hydration

Measure weight before and after exercise

- For every pound lost, drink 16 oz fluid

- If exercise > 1 hour, sports drink to replace electrolytes
  - To replace the sports drink, drink fruit juice, chocolate milk, and consume fruits and vegetables

Light yellow urine is good indicator of adequate hydration
Sports Drinks

Why do you think that Gatorade should only be used after 1 hour of intense exercise?

- Kids will drink one with lunch, one after school, and one with dinner
- Not being used for their original purpose
  - replacing lost carbohydrate and electrolytes

I ran for USU - 1:1 Gatorade with water (meet in Arizona)
Gatorade

9 tsp sugar!

How much sugar is in your drink?

Same amount as a can of coke

Better off drinking water
Supplements

Do teens need them?

30-40% young athletes take at least 1 dietary supplement

Touted to build strength and increase speed - *Bigger, Faster, Stronger*

For teens - useless at best, harmful at worst

- Products are not tested on teens, or regulated
- Adverse side affects - dehydration, kidney problems, cramps
- Affect hormone balance - stunted growth
- Can achieve all that they need through diet
Creatine

"One of most popular supplements"

Helps to create ATP in the body for muscle contractions

- Improve strength and performance - intermittent, high intensity activities
  Weight lifting, wrestling baseball

- Positive short term when using a carefully designed training program

- No studies for long term effects

- Not tested in teens
Side Effects

- weight gain
- muscle cramps
- kidney problems
- increased risk of heat illness / dehydration
- high blood pressure / heart problems
- dangerous interactions with other drugs
- Huntington's disease

Teens are highly discouraged from using creatine supplements

Creatine is found in protein-rich foods - Meat/fish
Caffeine

"#1 abused drug in the world"

Energy to get through the day,
Or the next workout

I will have an edge!

Some think it is needed,
can't perform without

It's cool
Caffeine

Absorbed in stomach, peaks 1-2 hours after ingestion

**Caffeine (3-9 mg/kg body weight) one hour before exercise improves endurance running and cycling performance**

- Trained, elite athletes

54 kg x 4 mg = 216 mg

- 85-95 mg in one cup coffee

**Mechanism behind endurance improvements is unclear**

*Caffeine improves performance in short term exercise up to 5 minutes at 90% - 100% effort*

- enhances muscles ability to work without oxygen

- Does not aide sprint performance
Side Effects

Caffeine is a diuretic
- High dose = poor hydration status

Caffeine is a stimulant
- Harmful effects on the developing nervous system and cardiovascular system
- Stimulates release of adrenaline, when this wears off - fatigue, irritability, headache
  - Disrupts sleep pattern
Energy Drinks

Popular among high school teens

Very high levels of caffeine, as well as other stimulants

- **Guarana** - South American plant that contains a caffeine compound called guaranine. One gram of guarana is equal to 40 mg of caffeine.

- **Ginseng** - root has also been linked to increased risk of insomnia, headache and hypertension.

- **B-vitamins** - some energy drinks have high levels, can be toxic
  Example: B6 toxicity - nerve damage

- **Sugars** - Users who consume two or three energy drinks could be taking in 90 to 120 grams of sugar, which is 4 to 6 times the maximum recommended daily intake

- **Caffeine**
  Mayo Clinic advises: Adolescents should limit themselves to no more than 100 mg of caffeine a day.

Soda is regulated at < 65 grams of caffeine

Energy Drinks aren’t regulated, "supplement"

20 oz red bull - 189 mg   24 oz wired X505 - 505 mg
24 oz Rockstar "punched" contains 360 mg
What is really in Energy Drinks?

DANGEROUS DRINKS?

CAFFEINE, B6, B12, Taurine, Guarana, L-Theanine

YouTube
Protein supplements

*Not necessary if consuming healthy diet*

*Advised that teens should:*

Shun supplements and consume real foods

*Muscles can get all the protein they need from foods*

**Quality Protein:** Lean meat, chicken, turkey, fish, eggs, low-fat milk, cheese and yogurt

*Include some protein in every meal to help muscles recover.*
Example of diet meeting protein needs:

1.7 grams protein/ kg body weight for strength training
  - high end of protein needs

\[ 54 \text{ kg} \times 1.7 \text{ grams protein} = 91.8 \text{ grams} \]

- 1 1/2 cups wheat chex = 9 grams
- 2 glasses 2% milk = 19 grams
- 1 cup spaghettios = 11 grams
- 2 hard boiled eggs = 16 g
- 4 oz tenderloin steak = 38 g

93 grams
When would protein supplements be warranted?

**Gaining Weight**

*6'3 Teenage boy weighing 140 lbs, trying to gain weight*

- Eats all day long trying to get 6,000 calories
- Can't physically eat enough food
  - Can pack in protein and calories without eating a meal

**Time Restraint**

*Rushing from activity to activity*

- Convenient
- Better than not eating
Wrap it Up

Athletes have increased energy needs
  • Growing, and being active

Females need to make sure they are eating enough to maintain menstruation
  • If missed period for >3 months seek help

If maintaining a healthy diet, pre- and post-exercise nutrition is beneficial for performance and recovery

Teen athletes get everything they need from a healthy diet
  • Don’t need supplements
  • Avoid energy drinks
  • Don’t need sports drinks unless exercise > 1 hour