Spec Tac Personal Training

# Beverages Quiz

**Please answer the following questions by ticking in one of the two boxes referring to "TRUE" or "FALSE".**

| | | TRUE | FALSE |
|---|---|---|---|
| 1. | Individuals who drink diet soda are more likely to get esophageal cancer. | ☐ | ☐ |
| 2. | Passengers on long-haul flights should avoid excess tea, coffee, cola and alcohol because cabin pressure causes water losses higher than normal. | ☐ | ☐ |
| 3. | In the last decade there has been an increase in the consumption of milk, milk drinks, whole milk, hot drinks like tea and coffee, and a decrease in soft drinks consumption. | ☐ | ☐ |
| 4. | Various studies on caffeine have concluded that doses of less than 250 mg of caffeine do not show any diuretic effect. | ☐ | ☐ |
| 5. | In the last decade there has been a decrease in fruit juice consumption. | ☐ | ☐ |
| 6. | The higher the alcohol concentration of a drink, the greater the diuretic effect (the greater the net fluid loss). For example, whisky produces a greater negative fluid balance compared with beer. | ☐ | ☐ |
| 7. | If your recommended consumption pattern is 2200-kcal day, and you drank three 600ml bottles of Coca Cola, then you have already consumed 33.5% of your daily energy requirement. | ☐ | ☐ |
| 8. | Each 12-oz serving of a carbonated, sweetened soft drink contains the equivalent of approximately 5 teaspoons of sugar. | ☐ | ☐ |

# ANSWERS

1. FALSE
   There is no direct connection between esophageal cancer and diet or regular soda.

2. TRUE

3. FALSE
   In the last decade there has been a decline in the consumption of milk, milk drinks, whole milk, hot drinks like tea and coffee, and a rapid increase in soft drinks consumption.

4. TRUE

5. FALSE
   In the last decade there has been an increase in fruit juice consumption.

6. TRUE

7. TRUE

8. FALSE
   Each 12-oz serving of a carbonated, sweetened soft drink contains the equivalent of 10 teaspoons of sugar.

Spec Tac Personal Training

# BEVERAGES

## Beverage trends:

The British Nutrition Foundation (2002) notes the following beverage trends:

- A decline in the consumption of milk, milk drinks
- A decline in the consumption of whole milk
- An increase in the consumption of low fat milks
- A decline in the consumption of hot drinks like tea and coffee
- A decline in total alcoholic beverage consumption
- An increase in wine consumption at home
- Rapid increase in soft drinks consumption
- Emergence of highly sophisticated marketing of energy drinks
- An increase in the consumption of bottled mineral water
- An increase in fruit juice consumption

(http://www.nutrition.org.uk/home.asp?siteId=43&sectionId=617&subSectionId=317&parentSection=299&which=1)

## Airplane flights and beverages:

The British Nutrition Foundation (2002) note:

> "**Passengers on long-haul flights should avoid excess tea, coffee, cola and alcohol because cabin pressure causes water losses higher than normal.** However, the **dehydrating effects of these drinks under normal circumstances are much less than commonly perceived**. Various studies on caffeine have concluded that doses of **more than** about **250-300mg** (equivalent to 3-5 cups of coffee, 5-8 cups of tea, 5-6 cans of caffeinated soft drinks) **have a mild diuretic effect, whilst doses of less than 250 mg do not show any effect**."

## The diuretic effects of beverages:

The British Nutrition Foundation (2002) note:

> "**Alcohol** has a more potent diuretic effect and **1g is sufficient to increase urine output by approximately 10ml**. However, a significant effect on hydration status has only been noted with **strong alcoholic drinks such as spirits**. The crucial factor is alcohol concentration i.e. **the higher the concentration, the greater the net fluid loss**. So, for example, whisky produces a greater negative fluid balance compared with beer, and small quantities of beer may reinstate fluid balance or lead to positive fluid balance in subjects who are already dehydrated."

# The Beverage Guidance System:

"Beverage consumption is an important factor contributing to rising rates of obesity. Americans consume approximately 21% of their daily energy in the form of beverages, and data suggest that intake of sweetened soft drinks and fruit drinks has risen precipitously over the past few decades.
…An expert panel led by Barry Popkin, PhD, of the University of North Carolina, Chapel Hill, convened in Boston to develop guidelines regarding the relative benefits and risks of various beverage categories. The resulting **Beverage Guidance System ranks beverages in preferential order, from Level 1, the most desirable, to Level 6, the least desirable, and provides recommendations for suggested and acceptable beverage consumption.**

**Energy Content is Key**
A basic premise of the system is that a healthy diet does not rely on fluids to provide energy or nutrient needs. Energy-containing fluids do not induce satiety equivalent to that of foods and according to some studies are not 'registered' for appetite regulation purposes. A diet that features high consumption of energy-dense beverages is, therefore, especially likely to contribute to obesity.
With energy and its implications regarding bodyweight as their primary consideration, the authors evaluated the overall health impact of a variety of different beverage categories…. They developed a **recommended consumption pattern for a person with a 2200-kcal daily energy requirement and a fluid requirement of 96 fluid ounces**. Their recommendations and key considerations for each category are listed below.

| | |
|---|---|
| Level 1: Water | …Recommended Range of Intake: 20-50 fl oz/d. |
| Level 2: Tea and Coffee | …Recommended Range of Intake: 0-40 fl oz/d. |
| Level 3: Low-Fat Milk and Soy Beverages | …Recommended Range of Intake: 0-16 fl oz/d. |
| Level 4: 'Diet' Drinks | …Recommended Range of Intake: 0-32 fl oz/d. |
| Level 5: Caloric Beverages With Nutrients | …Recommended Range of Intake: 0-8 fl oz/d 100% fruit juice;<br>0-1 alcoholic drink/d for women;<br>0-2 alcoholic drinks/d for men,<br>(A standard drink contains 14g alcohol.) |
| Level 6: Calorically Sweetened Beverages | …Recommended Range of Intake: 0-8 fl oz/d. |

**Controversial Rankings**
Few nutritionists would argue against the stance that **water is the 'ideal' beverage** and that calorically sweetened drinks should be consumed 'sparingly.' However, the rankings for some other popular beverages are likely to draw scrutiny from nutrition professionals. For example, **tea and coffee are ranked above low-fat dairy products** in the Beverage Guidance System hierarchy. While this may be consistent with the panel's focus on obesity prevention, many nutrition professionals would place at least as much, if not more, emphasis on the nutritive value of dairy products and their contribution to bone health, especially in children… Some nutritionists also might argue that, despite their potential cardiovascular benefits, **alcoholic drinks should not be ranked on the same level as 100% fruit and vegetable juices**, which carry no risk of dependence and deliver many key nutrients from their source foods."

**Reference**
Popkin, B. M. et al. (2006). A new proposed guidance system for beverage consumption in the United States. American Journal of Clinical Nutrition, 83, 529.

Lomangino, K. (2006, September). New guidelines address healthy beverage choices. Nutrition & the M.D., 32(9), 4-6.

  

# Soft Drinks:

The American Academy of Pediatrics' Policy Statement states:

> "Potential health problems associated with high intake of sweetened drinks are 1) **overweight** or **obesity** attributable to additional calories in the diet; 2) displacement of milk consumption, resulting in **calcium deficiency** with an attendant risk of osteoporosis and fractures; and 3) **dental caries** and potential **enamel erosion**…"
>
> "Soft drink consumers have a higher daily energy intake than nonconsumers at all ages… High-fructose corn syrup, the principle nutrient in sweetened drinks, is not a problem food when consumed in smaller amounts, but **each 12-oz serving of a carbonated, sweetened soft drink contains the equivalent of 10 teaspoons of sugar and 150 kcal**. Soft drink consumption increased by 300% in 20 years, and serving sizes have increased from 6.5 oz in the 1950s to 12 oz in the 1960s and 20 oz by the late 1990s. **Between 56% and 85% of children in school consume at least 1 soft drink daily**, with the highest amounts ingested by adolescent males. Of this group, 20% consume 4 or more servings daily. Each 12-oz sugared soft drink consumed daily has been associated with a 0.18-point increase in a child's BMI and a 60% increase in risk of obesity, associations not found with "diet" (sugar-free) soft drinks. Sugar-free soft drinks constitute only 14% of the adolescent soft drink market. **Sweetened drinks are associated with obesity**, probably because overconsumption is a particular problem when energy is ingested in liquid form and **because these drinks represent energy added to, not displacing, other dietary intake**. In addition to the caloric load, soft drinks pose a risk of dental caries because of their high sugar content and enamel erosion because of their acidity."

Committee on School Health (2004). Soft drinks in schools. Pediatrics, 113(1), 152-154. (http://pediatrics.aappublications.org/cgi/reprint/113/1/152)

Coca Cola provide the following information on their web-site concerning the sugar content and caloric count of their beverages (http://www.coca-cola.com.au/about_dietary.asp):

| | Sugar Content (grams per 100ml) | Calorie Count (per 100ml) |
|---|---|---|
| Coca-Cola | 10.6 | 41.0 |
| Diet Coke | 0.0 | 0.41 |
| Cherry Coke | 10.7 | 44.0 |
| Vanilla Coke | 10.9 | 44.0 |
| Lift | 12.0 | 47.0 |
| Diet Lift | - | 1.7 |
| Sprite | 10.0 | 40.0 |
| Diet Sprite | - | 1.0 |
| Fanta | 13.0 | 52.0 |
| PowerAde | 6.0 | - |

  

A 600ml (approx 8 ounces) bottle of Coca Cola has **246** calories.

Whereas:

A 600ml bottle of **DIET** Coke has **less than 3 calories**.

If your recommended consumption pattern
is 2200-kcal day,
and you drank **three** **600ml** **bottles** **of** **Coca Cola**,
then you have already consumed **33.5%** of your
daily energy requirement.

A 600ml (approx 8 ounces) bottle of Lift has **282** calories.

Whereas:

A 600ml bottle of **DIET** Lift has **less** than **11** calories.

If your recommended consumption pattern
is 2200-kcal day,
and you drank **three** **600ml** **bottles** **of** **Lift**,
then you have already consumed **38.5%** of your
daily energy requirement.

# Soda drinkers advised to lighten up

"Researchers revisit various risk factors as they observe a rise in esophageal cancer but can't pinpoint a cause.

**Q.** Is there any connection between esophageal cancer and diet soda?

**A.** The quick answer is no: **there's no direct connection between esophageal cancer and diet or regular soda**. But the quick answer doesn't tell the whole story. There are interconnections between soda, obesity, gastroesophagel reflux disease (GERD) and esophageal cancer that may indicate that it's best to go easy on soda.

The incidence of esophageal cancer continues to increase, and so far, researchers can't pinpoint a single reason for the increase.

…While soda alone doesn't cause obesity, it can contribute to weight gain. A 12-ounce regular soda contains about 10 teaspoons of sugar. Diet soda, while calorie free, could contribute to weight gain, too.

A study presented at last year's annual meeting of the American Diabetes Association found that for **people who drank two or more cans of diet soda a day, the risk of becoming overweight or obese was 57.1 percent, compared to 47.2 percent for those who drank more than two cans of regular soda a day**. The study done by researchers at Texas Health Science Center, tracked 622 people for about seven years.

It's not clear why diet soda consumption was associated with a higher risk of weight gain. The researchers speculated that diet soda drinkers fared worse because they opted for diet soda in an effort to loose weight. But drinking diet soda – without other changes – isn't enough to shed pounds. Or, it was theorized that perhaps the artificial sweeteners in diet soda somehow stimulate appetite."

Mayo Clinic/Medical Edge (2006, September 5). Soda drinkers advised to lighten up. Staten Island Advance, C5.

# Smoothies

Melissa Gotthardt in an article entitled "Wake Up With The Shakes" suggests 5 healthy smoothies. Two of them are presented below:

## Brain Builder

**Ingredients:**
1 cup skim milk
2 tbsp frozen orange-juice concentrate
1 cup strawberries
1 kiwi fruit

Total kJ=928
1.4g fat (5.7% of kJ)
6.7g fibre
10.7g protein
44.5g carbohydrate

## Prostate Protector

**Ingredients:**
1 cup vanilla soy milk
½ cup pink grapefruit juice
1 cup ripe honeydew chunks
2 tbsp wheat germ
Honey (to taste)

Total kJ=986
3.6g fat (13.7% of kJ)
4g fibre
8.6g protein
46g carbohydrate

## Vegetable Juice

The Mayo Clinic suggest that there are 10 great foods. 9 of them are solids (apples, almonds, blueberries, broccoli, red beans, salmon, spinach, sweet potatoes, wheat germ). The other is a liquid: vegetable juice.

"**Why drink vegetable juice?**
Vegetable juice has most of the vitamins, minerals and other nutrients found in the original vegetables and is an easy way to include vegetables in your diet. Tomato juice and vegetable juices, which include tomatoes, are good sources of lycopene, an antioxidant which may reduce the risk of heart attack, prostate cancer and possibly other types of cancer. Some vegetable and tomato juices are very high in sodium, so be sure to select the low sodium varieties."

Source: http://www.mayoclinic.com/health/health-foods/NU00632

## Tart Cherry Juice

"Numerous antioxidant and anti-inflammatory agents have been identified in tart cherries. The purpose of this study was to test the efficacy of a tart cherry juice blend in preventing the symptoms of exercise-induced muscle damage. METHODS: This was a randomized, placebo-controlled, crossover design. Fourteen male college students **drank 12 fl oz of a cherry juice blend, or a placebo, twice per day for eight consecutive days. A bout of eccentric elbow flexion contractions (2 x 20 maximum contractions) was performed on the fourth day of supplementation**. Isometric elbow flexion strength, pain, muscle tenderness and relaxed elbow angle were recorded prior to, and for four days following the eccentric exercise. The protocol was repeated two weeks later with subjects who took the placebo initially, now taking the cherry juice (and vice versa). The opposite arm performed the eccentric exercise for the second bout to avoid the repeated bout protective effect. RESULTS: **Strength loss and pain were significantly lower in the cherry juice trial versus placebo** (Time by Treatment: Strength P<0.0001, Pain P=0.017). Relaxed elbow angle (Time by Treatment P=0.85) and muscle tenderness (Time by Treatment P=0.81) were not different between trials. CONCLUSIONS: These data show efficacy for this cherry juice in decreasing some of the symptoms of exercise-induced muscle damage. Most notably, strength loss averaged over the four days after eccentric exercise was 22% with the placebo but only 4% with the cherry juice."

Connolly, D., McHugh, M., & Padilla-Zakour, O. (2006). The efficacy of a tart cherry juice blend in preventing the symptoms of muscle damage. British Journal of Sports Medicine.