

Presentation Notes – Water-Soluble Vitamins

Slide 1



Presentation Notes – Water-Soluble Vitamins

Slide 2

Copyright

Copyright © Texas Education Agency, 2012. These Materials are copyrighted © and trademarked™ as the property of the Texas Education Agency (TEA) and may not be reproduced without the express written permission of TEA, except under the following conditions:

- 1) Texas public school districts, charter schools, and Education Service Centers may reproduce and use copies of the Materials and Related Materials for the districts' and schools' educational use without obtaining permission from TEA.
- 2) Residents of the state of Texas may reproduce and use copies of the Materials and Related Materials for individual personal use only, without obtaining written permission of TEA.
- 3) Any portion reproduced must be reproduced in its entirety and remain unedited, unaltered and unchanged in any way.
- 4) No monetary charge can be made for the reproduced materials or any document containing them; however, a reasonable charge to cover only the cost of reproduction and distribution may be charged.

Private entities or persons located in Texas that are **not** Texas public school districts, Texas Education Service Centers, or Texas charter schools or any entity, whether public or private, educational or non-educational, located **outside the state of Texas** *MUST* obtain written approval from TEA and will be required to enter into a license agreement that may involve the payment of a licensing fee or a royalty.

For information contact: Office of Copyrights, Trademarks, License Agreements, and Royalties, Texas Education Agency, 1701 N. Congress Ave., Austin, TX 78701-1494; phone 512-463-7004; email: copyrights@tea.state.tx.us.




Copyright © Texas Education Agency, 2012. All rights reserved. 2

Presentation Notes – Water-Soluble Vitamins

Slide 3

Water Soluble Vitamins

- Dissolve in water
- Pass easily through the bloodstream
- Remain in the body for a short time
- Are needed on a daily basis



Copyright © Texas Education Agency, 2012. All rights reserved.

3


Include Biotin, Folate, Niacin, Pantothenic Acid, Riboflavin, Thiamin, Vitamin B6, Vitamin B12, Vitamin C.

Presentation Notes – Water-Soluble Vitamins

Slide 4

Biotin

Functions <ul style="list-style-type: none">• Helps body use carbohydrates, proteins, and fats• Helps stabilize sugar level	Food Sources <ul style="list-style-type: none">• Green leafy vegetables• Whole-grain breads and cereals• Liver• Egg yolks
---	---



Copyright © Texas Education Agency, 2012. All rights reserved.

4

Deficiencies and Excesses

Effects of getting too little

- Dry, scaly skin
- Inflammation of the stomach and intestines
- Hair loss

Effects of getting too much


No known effects

Presentation Notes – Water-Soluble Vitamins

Slide 5

Folate (B9) (Folacin, Folic acid)

Functions <ul style="list-style-type: none">• Teams with vitamin B₁₂ to help build red blood cells and form genetic material (DNA)• Helps your body use proteins• Helps prevent birth defects in brain and spinal cord	Food Sources <ul style="list-style-type: none">• Green leafy vegetables• Dry beans and peas• Fruits• Enriched and whole-grain breads
--	--

Copyright © Texas Education Agency, 2012. All rights reserved.5

Deficiencies and Excesses

Effects of getting too little

- Anemia
- Feel tired and weak
- Develop diarrhea
- Weight loss

Effects of getting too much

- Masks the symptoms of vitamin B₁₂ deficiency


A health professional may prescribe additional folate during pregnancy and lactation.

Presentation Notes – Water-Soluble Vitamins

Slide 6

Niacin (Vitamin B₃)

<p>Functions</p> <ul style="list-style-type: none">• Helps your body release energy from carbohydrates, proteins, and fats• Needed for a healthy nervous system and mucous membranes	<p>Food Sources</p> <ul style="list-style-type: none">• Meat, poultry, fish• Enriched and whole-grain breads and cereals• Dry beans and peas• Peanuts
--	---



Copyright © Texas Education Agency, 2012. All rights reserved.

6

Deficiencies and Excesses

Effects of getting too little

- Pellagra – a disease that produces skin lesions and mental and digestive problems
 - Sensitivity to sunlight
 - Aggression
 - Dry and reddened skin with sores
 - Insomnia
 - Weakness

Effects of getting too much


- Flushing red of the face

Presentation Notes – Water-Soluble Vitamins

Slide 7

Pantothenic acid

<p>Functions</p> <ul style="list-style-type: none">• Helps the body release energy from carbohydrates, proteins, and fats• Helps the body produce cholesterol• Promotes normal growth and development• Needed for a healthy nervous system	<p>Food Sources</p> <ul style="list-style-type: none">• Meat, poultry, fish• Eggs• Dry beans and peas• Whole-grain breads and cereals• Milk• Some fruits and vegetables
--	---



Copyright © Texas Education Agency, 2012. All rights reserved. 7

Deficiencies and Excesses

Effects of getting too little

- Nausea
- Insomnia

Effects of getting too much


No known effects

Presentation Notes – Water-Soluble Vitamins

Slide 8

Riboflavin (Vitamin B₂)

Functions <ul style="list-style-type: none">● Helps your body release energy from carbohydrates, proteins, and fats● Contributes to body growth and red blood cell production	Food Sources <ul style="list-style-type: none">● Enriched breads and cereals● Milk and other dairy products● Green leafy vegetables● Eggs● Meat, poultry, fish
---	---



Copyright © Texas Education Agency, 2012. All rights reserved.

8

Deficiencies and Excesses

Effects of getting too little

- Ariboflavinosis
 - Sore throat
 - Cracked lips
 - Moist scaly skin
 - Magenta-colored tongue
 - Decreased red blood cell count

Effects of getting too much


No known effects

Presentation Notes – Water-Soluble Vitamins

Slide 9

Thiamin (Vitamin B₁)

Functions	Food Sources
<ul style="list-style-type: none">• Helps turn carbohydrates into energy• Needed for muscle coordination and a healthy nervous system	<ul style="list-style-type: none">• Enriched and whole-grain breads and cereals• Dry beans and peas• Lean pork• Liver



Copyright © Texas Education Agency, 2012. All rights reserved.

9

Deficiencies and Excesses

Effects of getting too little

- Beriberi
 - Weakened heart
 - Wasting
 - Partial paralysis

Effects of getting too much


No known effects

Presentation Notes – Water-Soluble Vitamins

Slide 10

Vitamin B₆

Functions	Food Sources
<ul style="list-style-type: none">● Helps body release energy from carbohydrates, proteins, and fats● Promotes healthy nervous system● Helps make nonessential amino acids	<ul style="list-style-type: none">● Poultry, fish, pork● Dry beans and peas● Nuts● Whole grains● Some fruits and vegetables● Liver and kidneys

Copyright © Texas Education Agency, 2012. All rights reserved.10

Deficiencies and Excesses

Effects of getting too little

- Anemia (low red blood cell count)

Effects of getting too much


- Impairment of proprioception (awareness of your own movement)
- Nerve damage
- Skin lesions

Presentation Notes – Water-Soluble Vitamins

Slide 11

Vitamin B₁₂

Functions <ul style="list-style-type: none">• Helps body use carbohydrates, proteins, and fats• Helps maintain healthy nerve cells and red blood cells• Used in making genetic material	Food Sources <ul style="list-style-type: none">• Found naturally in animal foods, such as meat, poultry, fish, shellfish, eggs, and dairy products• Some fortified foods• Some nutritional yeasts
--	--



Copyright © Texas Education Agency, 2012. All rights reserved.

11

Deficiencies and Excesses

Effects of getting too little

- Pernicious anemia (low red blood cell count)

Effects of getting too much


No known effects

Presentation Notes – Water-Soluble Vitamins

Slide 12

Vitamin C (Ascorbic Acid)

<p>Functions</p> <ul style="list-style-type: none">• Helps maintain healthy capillaries, bones, skin, and teeth• Helps form collagen, which gives structure to bones, cartilage, muscles, and blood vessels• Helps your body heal wounds and resist infections• Aids in absorption of iron• Works as an antioxidant	<p>Food Sources</p> <ul style="list-style-type: none">• Fruits – citrus fruits (orange, grapefruit, tangerine), cantaloupe, guava, kiwi, mango, papaya, strawberries• Vegetables – bell peppers, broccoli, cabbage, kale, plantains, potatoes, tomatoes
--	---



Copyright © Texas Education Agency, 2012. All rights reserved.

12

Deficiencies and Excesses

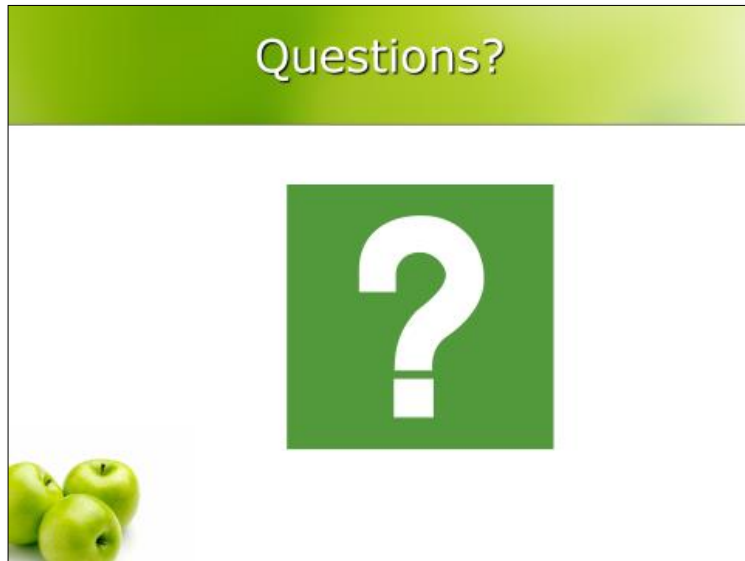
Effects of getting too little

- Scurvy
 - Paleness
 - Depression
 - Spongy gums
 - Bleeding from mucous membranes

Effects of getting too much

- Indigestion
- Diarrhea

Presentation Notes – Water-Soluble Vitamins



Presentation Notes – Water-Soluble Vitamins

Slide 13


References and Resources

Textbooks:

- Duyff, R. L. (2010). *Food, nutrition & wellness*. Columbus, OH: Glencoe/McGraw-Hill.
- Kowtaluk, H. (2010) *Food for today*. Columbus, OH: Glencoe/McGraw-Hill.
- Weixel, S., & Wempen, F. (2010). *Food & nutrition and you*. Upper Saddle River, NJ: Pearson/Prentice Hall.

Website:

- U.S. Department of Agriculture.
ChooseMyPlate.gov Website. Washington, DC. Fruits.
<http://www.choosemyplate.gov/food-groups/fruits.html>
Accessed December, 2012.



Copyright © Texas Education Agency, 2012. All rights reserved. 13