Rickets

Rickets is a disorder caused by a lack of vitamin D, calcium, or phosphate. It leads to softening and weakening of the bones. Infants who are breastfed only may develop vitamin D deficiency. Human breast milk does not supply the proper amount of vitamin D. This can be a particular problem for darker-skinned children in winter months (when there are lower levels of sunlight).

Not getting enough calcium and phosphorous in your diet can also lead to rickets. Rickets caused by a lack of these minerals in diet is rare in developed countries, because calcium and phosphorous are found in milk and green vegetables.

Your genes may increase your risk of rickets. Hereditary rickets is a form of the disease that is passed down through families. It occurs when the kidneys are unable to hold onto the mineral phosphate. Rickets may also be caused by kidney disorders that involve renal tubular acidosis.

During the Industrial Revolution, rickets appeared in epidemic form in temperate zones where the pollution from factories blocked the sun's ultraviolet rays. Thus, rickets was probably the first childhood disease caused by environmental pollution.

Rickets was common in the past, but itmdst1ydisappeared in the Western world during the early twentieth century thanks to the fortification with vitamin D of foods such as margarine and cereal. However, there has been an increase in cases of rickets in the UK in recent years.

The number of rickets cases is still relatively small-less than 900 cases were diagnosed in hospitals in England during 2012- but studies have shown that a significant number of people in the UK

have low levels of vitamin D in their blood.

Any child whose diet does not contain enough vitamin D or calcium can develop rickets, but the condition is more common in children with dark skin children born prematurely, and children taking medication that interferes with vitamin D.

Symptoms of rickets are as followed: bone pain, poor growth and deformities of the skeleton, such as bowed legs, curvature of the spine and thickening of the ankles, wrists and knees.

Rickets can easily be prevented by eating a diet that includes vitamin D and calcium, as well as spending some time in sunlight. The hands and face only need to be exposed to the sunlight for about 15 minutes a few times a week during spring and summer to provide you with enough vitamin D.

Dr. Robert P. Schwartz, an endocrinologist at Wake Forest University School of Medicine in Winston-Salem, N.C., lead author of the study, says "This is a disease that was here 100 years ago, is back."

Rickets has been assumed to be a disease in the past but it has never been truly eliminated. It is making a surge back and worrying many people. Rickets is rare in the U.S but it is still possible to get it. It is preventable.

Rickets can be treated by replacing the missing vitamin or mineral in your body. If you are deficient in vitamin D, your doctor will likely tell you to get more sun and eat foods high in vitamin D, such :fish, milk, liver and eggs.

1 http://www.nlm.nih.gov/medlineplus/ency/article/000344.htm

2 http://www.nhs.uk/conditions/rickel2/Jlages/introduction.aspx

3 Balk SJ; Council on Environmental Health; Section on Dermatology. Ultraviolet radiation: a hazard to
4 children and adolescents. *Pediatrics*. 201 1:127(3):e791-817.
5 Grant WB, Boucher BJ. Requirements for Vitamin D across the life span. *Bioi Res Nurs*. 2011;13(2):120-
6 133.
7 Rickets: what it is and how it's treated. American Academy of Family Physicians! FamilyDoctor.org website.
8 Available at: http://familydoctor.org/fami lydoctor/en/diseases-conditions/rickets. html. Updated November
9 2010. Accessed July 30,2013.
10 Vitamin D deficiency in children (infancy through adolescence). EBSCO DynaMed website. Available at:
11 http://www.ebscohost.com/dynamed. Updated June 5, 2013. Accessed July 30,2013.
12 Wagner CL, Greer FR, American Academy of Pediatrics Section on Breastfeeding, American Academy of
13 Pediatrics Committee on Nutrition. Prevention of rickets and vitamin D deficiency in infants, children, and
14 adolescents. *Pediatrics*. 2008; 122: l 142-1152.

Work Sample Evaluation

Subject Area: Human Anatomy and Physiology
Task Title: A Bone to Pick
Student Work Sample Title: Rickets

The document was scored using the *CCR Task Bank Rubric*. The final scores are indicated in the following chart.

Scoring Criteria	Insufficient Evidence	Developing	Progressing	Accomplished	Exceeds
Research and Investigation				**X**	
Ideas and Content		**X**			
Reading and Analysis	**X**				
Communication		**X**			
Organization		**X**			
Accuracy			**X**		

Annotations: The following evidence from the work sample and the reviewer's comments support the scores above. Page and line numbers refer to the original work sample.

Scoring Criteria	Page #	Line #	Commentary about the work sample
Research and Investigation: *Locating resources independently and/or identifying information within provided texts*	3	1-14	Seven references were used in the paper and are listed on the works cited page; four of the seven sources are journals.
Ideas and Content: *Presenting a thesis and understanding concepts*			The student makes no attempt at a thesis statement and jumps right into the details of the paper.
			The student focuses solely on causes, prevention, and treatment of Rickets without discussing how treatments work in curing Rickets or how the skeletal system impacts other systems. The paper shows only a rudimentary understanding of the skeletal system and its relationship with the other body systems.
Reading and Analysis: *Evaluating sources and selecting evidence to support the central idea*			None of the sources are cited anywhere in the body of the paper, so it is difficult to tell which ones were actually read and evaluated in order to be used in the paper.
	1	25-28	The student makes reference to Rickets in the UK, however the paper should include data pertinent to the U.S.
Communication: *Using subject-appropriate language and considering audience*			The very basic language (including sentence structure) of the paper is not appropriate, especially since the student is supposed to be writing as a first-year medical student.
	1	12-13	The definition of heredity is not provided, however the audience for a paper written by a medical student would know what this means.
Organization: *Structuring main ideas and supporting information*	2	2-5	There is a repetition of the causes of Rickets throughout the paper.
	2	9-13	Areas within the paper on how to prevent Rickets are repetitive as well.
Accuracy: *Attending to detail, grammar, spelling, conventions, citations, and formatting*	1	8, 12	The tone of the paper is inappropriately informal, e.g., using the second person pronouns "your" and "you."
	1	21	There is a spelling error on this line; it is unclear what the student was attempting to write.
			Other minor grammatical errors were present throughout most of the paper.
	3		All citations on the Works Cited page are entered incorrectly.