

Atoms, Molecules Bonding and Beyond - Antioxidants Research Paper

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Eating the daily servings of fruits and vegetables can lead to a healthy life.

Certain fruits and vegetables contain antioxidants. Antioxidants supplements play an important role in the human body's immune system. They are found in most fruits and vegetables. These antioxidants neutralize free radicals in your body. Free radicals causes oxidative stress and can cause damage to our cells and cause many diseases. These free radicals are unavoidable so it is essential to maintain antioxidant consumption.

Free radicals are molecules that bombard cells. According to Dr. David Stevenson, "Free radicals are essentially molecules with broken bonds, so they are highly reactive and will react with anything that they come into contact with." During oxidation, an electron could be taken out of a chemical bond due to a weak bond and it results in a highly reactive unshared electron. These free radicals capture electrons from healthy molecules to become stable. The damaged cell can release free radicals that will continue the effects of oxidation to surrounding cells. Some factors that cause oxidation are drugs, smoking, aging, and stress. These free radicals can cause damage to the body, cancer, and many different disease. They are also factors in aging.

Antioxidants are important for the human body's immune system. They help defend against free radicals by providing their extra electrons to neutralize free radicals. This causes the free radical to create a bond with the electron that it received. They remain stable when losing electrons and do not turn into free radicals themselves. According to

1 Healthchecksystems.com, "They act as scavengers, helping to prevent cell and tissue
2 damage that could lead to cellular damage and disease."

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4 Antioxidants will help prevent diseases. It may also help cure diseases such as
5 cancer. According to , "Certain "antioxidant" substances, such as vitamin C, are able to
6 exploit the differences between cancer and healthy cells; they kill cancer cells while
7 helping healthy cells." Antioxidants act as prooxidants that produce hydrogen peroxide
8 which attacks the cancer. This does not conclude that antioxidants can cure cancer.

9 Taking antioxidants during cancer treatment can have random results. It can not be
10 anticipated that antioxidants can make the cancer therapy better or worse. There is no
11 clear effect of what antioxidants can do to cancer treatment so cancer patients should
12 take caution in taking the antioxidant supplements. There is also no proof of any other
13 disease that is cured by taking antioxidants. The best thing right now is to prevent it by
14 taking antioxidants to prevent the free radicals from spreading and causing the
15 diseases.

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17 Taking antioxidants daily in food is important when living a healthy life. It can
18 prevent many diseases such as cancer. Antioxidants neutralize free radicals by giving
19 them an electron so that they would become stable. These antioxidants can be found in
20 certain fruits and vegetables.

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1 Works Cited

2 "Antioxidants and Cancer Prevention." *National Cancer Institute*. N.p., n.d. Web. 02
3 Nov.2014.

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5 "Antioxidants Prevent Cancer and Some May Even Cure It." *Antioxidants Prevent*
6 *Cancer and Some May Even Cure It*. N.p., n.d. Web. 02 Nov. 2014.

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8 "Free Radicals and Antioxidants." *Science Learning Hub RSS*. University of Waikato, 18
9 Mar. 2011. Web. 02 Nov. 2014.

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11 "Understanding Free Radicals and Antioxidants." *Understanding Free Radicals and*
12 *Antioxidants*. N.p., n.d. Web. 02 Nov. 2014.

Work Sample Evaluation

Subject Area: Chemistry

Task Title: Atoms, Molecules, Bonding, and Beyond

Student Work Sample Title: Antioxidants Research Paper

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: <i>Locating resources independently and/or identifying information within provided texts</i>	1	12-13	Introducing this quote with a doctor’s name may be intended to raise the credibility of the source, but the source is not cited with enough detail in the text. In fact, the quote comes from http://sciencelearn.org.nz/Contexts/Food-Function-and-Structure/Sci-Media/Video/Free-radicals-and-antioxidants
	2	1-2	The use of Healthchecksystems.com brings the writers research abilities into question because this source cannot be considered credible.
	2	5-7	This section provides the reader with a quote from an uncited source. There is no evidence to determine where the quote came from. The writer began the sentence with “According to...” but left the resource portion blank and moved on with the quote.
Ideas and Content: <i>Presenting a thesis and understanding concepts</i>	1	4-10	The opening paragraph gives the basis for a good thesis sentence; however, no full thesis statement is provided. It is as if the writer intended the entire first paragraph to count as the thesis statement.
Reading and Analysis: <i>Evaluating sources and selecting evidence to support the central idea</i>	1	12-17	The writer cites information to explain the dangerous nature of free radicals in the body, which is a good example of using information from sources to guide the dialogue.
	2	1-2	The quote used by the writer is awkward because it does not fit with the discussion that is occurring right before the actual quoted statement.
Communication: <i>Using subject-appropriate language and considering audience</i>	1-2		The writing in the work sample is extremely repetitive. It seems as though the writer did not have enough information to fill the specified length requirement and was rewording separate sections to lengthen the document. Example provided below:
	1	5-6, 21	“Antioxidants supplements play an important role in the human body’s immune system.” “Antioxidants are important for the human body’s immune system.”
Organization: <i>Structuring main ideas and supporting information</i>	1-2		When writing scientific informational text, students should be citing references quite frequently because almost all of the information they are presenting comes as a result of conducting research. There are not enough references to outside information in this work sample.
	1	21	This feels like a new section about antioxidants and should be set off in a new paragraph.
	1-2		There is no mention of specific antioxidants that are beneficial.
Accuracy: <i>Attending to detail, grammar, spelling, conventions, citations, and formatting</i>	2	5	After “According to...”, there is a portion of information missing. This would provide the reader with the source to the quote that follows.
	1	20	“Disease” should be plural to fit within the grammar appropriate for the sentence.