

Carbon Monoxide Poisoning

Introduction:

Carbon monoxide is odorless, clear gas that is produced from the burning of fuels, particularly kerosene, coal, and gasoline. The gas that is released from the combustion of the following materials can be very deadly if inhaled. Carbon monoxide is deadly due to the fact that it attaches itself to the red blood cells quicker and more efficiently than oxygen can, creating a barrier in which your red blood cells are no longer carrying oxygen through the bloodstream. While everyone can be affected directly from its effects, it is twice as deadly to unborn children, infants, and people who have heart conditions or anemia. While on average about 500 Americans die from carbon monoxide poisoning, which might seem low in comparison to disease such as cancer or heart disease, the number increases greatly on a year to year scale due to the more widespread use of home heating by fuel and the amount of automobiles on the roads. Carbon monoxide poisoning is also used in suicides quite often throughout the United States. Hopefully, with the development of alternative energy sources, we can help to stop the creation of carbon monoxide and prevent the pollution and damage it can cause to all wildlife and ourselves.

Section 1: Background

Centers for Disease Control and Prevention

<http://www.cdc.gov/co/faqs.htm#symptoms>

This Web site was particularly interesting and helpful. Not only was it full of information on background and prevention, it gave very detailed graphs in almost every topic it discussed; showing you how the carbon monoxide attaches to the red blood cell and also showing you how to prevent things such as home furnaces from leaking the gas into the air. It also gives great prevention tips and information about who is at an increased risk for death due to the poisoning.

MedlinePlus

<http://www.nlm.nih.gov/medlineplus/carbonmonoxidepoisoning.html>

This Web site was very easy to navigate and retrieve information from. While not as straight forward as the aforementioned site, it provided a very easy to use webpage. All the topics are color-coded and contain .pdf files that are full of information on many topics including symptoms and prevention. This site also had very useful tools such and recent updates that shows you that the site really is taking the time to educate people on staying safe.

Healthy People 2010

<http://www.epa.gov/iaq/pubs/coftsht.html>

While this Web site was very short, it did contain the necessary information about prevention and who is susceptible to carbon monoxide poisoning. Although the Web site had no helpful tabs and no real room for navigation, it did surprisingly have information about home carbon monoxide detectors and how to use them, which was quite interesting seeing as how both previous Web sites did not.

Department of Health

http://www.doh.wa.gov/ehp/ts/iaq/co_fact_sheet.htm

This Web site contained a great deal of information. It had many helpful tabs and was quite easy to navigate. I also enjoyed how they italicized and colored important words and facts to help them stand out. This was helpful in learning some of the technical terms that they use on their site. The top tabs were also easy to use and each page was complete and full of information. They also had contact information for people that deal with this toxic gas, which is quite interesting.

Section 2: Research

A study on the effect of methanol during determination of carbon monoxide in blood

http://www.ncbi.nlm.nih.gov/pubmed/15150877?ordinalpos=1&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DefaultReportPanel.Pubmed_RVDocSum

Research: Blood that had been plagued with carbon monoxide poisoning was taken and studied. While the typical procedure was used, they attempted to use a similar method by using methanol to detect the carbon monoxide in the blood.

Results: Unless heated or added with other chemicals, the methanol does not detect the presence of CO in the bloodstream.

The use of hyperbaric oxygen to cure CO poisoning

<http://www.ncbi.nlm.nih.gov/pubmed/10796853>

Research: To attempt to stop the neurological damage caused by carbon monoxide by using hyperbaric oxygen on patients affected by the poisoning.

Results: While in three of the six patients the hyperbaric oxygen did prevent neurological damage, the test results cannot be exact due to the difference in severity in the different patients

and also the dosage of hyperbaric oxygen that was given to each patient varied, creating variables that did not fit into the experiment.

Testing cardiovascular manifestations after CO poisoning

http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6T18-4FWNJ22-D&_user=843411&_rdoc=1&_fmt=&_orig=search&_sort=d&_view=c&_acct=C000045579&_version=1&_urlVersion=0&_userid=843411&md5=e16ab7dc7284a4d5475c0e50a0c66562

Research: To test the hearts and cardiovascular passages of patients who had suffered from moderate or severe carbon monoxide poisoning.

Results: After testing 230 people with moderate to severe carbon monoxide poisoning who were treated with hyperbaric oxygen, changes were present in 30% of the patients. Cardiovascular sequela was very frequent.

Amount of carbon monoxide related cases in the United States

<http://www.ncbi.nlm.nih.gov/pubmed/17357356>

Research: Results were taken from a national surveillance system that monitors how much carbon monoxide is prevalent in cases around the country.

Results: Out of the 740 identified cases, statistics were as followed: 47 were hospitalized, 442. Were seen in emergency rooms, and 251 were seen in outpatient settings.

Section 3: Statistics

Carbon monoxide fatalities due to space heaters

http://www.epi.alaska.gov/bulletins/docs/b1985_14.htm

The statistics on this Web site were explained very clearly. The only problem with the Web site is that a majority of the information is not recent, making much of what is stated irrelevant to today's standards.

Chimney fires and carbon monoxide

<http://www.csia.org/PressRoom/ChimneyFiresCarbonMonoxideStats/tabid/63/Default.aspx>

This Web site's statistics were very useful. They were clearly presented in tables and were much more up to date. It also gave information on many other topics that can help to prevent carbon monoxide poisoning. The graphs were very easy to read and were very helpful.

Unintentional non-fire related carbon monoxide poisoning

<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5402a2.htm>

This was one of the few bad sites I had run across. The information was presented very poorly. The words and information was very difficult to read as it was not spaced out or separated at all. There were graphs and tables, however they were small and hard to read. There was too much irrelevant information.

Early detection of carbon monoxide poisoning

www.syndromic.org/conference/2007/powerpoint/CO_study_SSC2007_rev2.ppt

While this was not a Web site, this link directed me to a very informative PowerPoint presentation. Every slide had great information backed by graphs and grids that had reliable information. It also was useful by bolding words that were important and helping to understand scientific terms that might seem confusing.

Section 4: Consumer Information

Carbon monoxide poisoning fact sheet

http://www.osha.gov/OshDoc/data_General_Facts/carbonmonoxide-factsheet.pdf

This Web site was great, showing you a pamphlet with much of the necessary information about CO poisoning. It also includes prevention and symptoms, which are major necessities for educating those who need it. Finally, it gave many phone numbers and departments you can call if an emergency occurs or if you have further questions about the subject.

Carbon monoxide prevention webcast

<http://www2a.cdc.gov/phtn/COPoisonPrev/default.asp>

This Web site is a wonderful Web site for learning about CO poisoning. It not only has the facts written out for you, but it also contains a webcast video that contains all of the information from the aforementioned sites with great examples and great explanation.

Carbon Monoxide Poisoning Information

<http://www.nlm.nih.gov/medlineplus/ency/article/002804.htm>

This Web site was the best I found of all the Web sites that I searched. It not only contained all the necessary information, but it was presented in an easy to read fashion with many links that took you to the exact problem you were looking for. The site was spread out nicely, as with the amount of information presented Web sites tend to get crowded and hard to read.

Carbon Monoxide Poisoning Facts and Reports

http://www.nfpa.org/itemDetail.asp?categoryID=280&itemID=18270&URL=Research%20&%20Reports/Fact%20sheets/Home%20safety/Carbon%20monoxide%20poisoning&cookie_test=1

This Web site contained very little information and was very unclear. I was very lost on what the motive of this site was, and I do not recommend using it. Its information was limited and very difficult to read.

Conclusion:

Section 1

The best Web site I found was the nlm.hih.gov Web site, which was very clear and had massive amounts of information. The Web site was very easy to use and was very helpful for beginners and well informed people alike. It also contained links to other sites in case they did not have the information you were looking for. The worst Web site was nfpa.org, which was very misleading in its title. It had little to no information and was very sloppy.

Section 2

The research found on the Internet was very spotty and hard to read. Even after further researching many of these topics I found myself lost due to many scientific terms that the average person would have to research in order to understand the experiment. I felt like the

research was also the hardest part of the summary report because it was very hard to decipher these experiments.

Section 3

Although all of the sites contained some sort of statistic, I found it very interesting that carbon monoxide poisoning fatalities are often self-inflicted. According to the statistics, it is 4 times more likely that a carbon monoxide fatality is a suicide than an unintentional death.

Section 4

This was my favorite section because the best and worst sites I found both fell under this category. While most of the Web sites I found were very informative, only a few were confusing and only one was completely useless. I think that all the sites (minus the one) have at least something that you can pull from to gain knowledge about CO poisoning.

Overall, CO poisoning was much less interesting than I had thought it would be. While there are many different things that can spawn CO, there aren't very many cases per year in the United States and there are only a handful of treatments. One thing that I did find interesting is that there are now home CO detectors that work very well and have helped to cut the risk of a serious problem occurring in your home down by a lot. By working like a smoke detector, they can alarm you if there is a problem or contamination within your home, which can help to save you from becoming ill or even dying.

Back to Betty C. Jung's Web site	http://www.bettyjung.net/
Back to Web site Critique Reports Directory	http://www.bettyjung.net/Pch201wsreports.htm

Carbon Monoxide Poisoning (Class Handout)

Carbon monoxide (CO) is an odorless, clear gas that can be extremely deadly. It is formed as a byproduct of combustion, particularly from the burning of fuel such as gasoline, oil, kerosene, or coal. By attaching itself to your red blood cells, it creates a barrier blocking oxygen from getting to the cells, which in turn can cause serious health problems for the heart and brain and can eventually lead to death.

Section 1: Background

http://www.doh.wa.gov/ehp/ts/iaq/co_fact_sheet.htm

This Web site contained the best information and was the easiest to use and navigate. It had many helpful links and also contact information for emergencies or questions.

Section 2: Research

<http://www.ncbi.nlm.nih.gov/pubmed/10796853>

Although all the research topics were very confusing, this topic had the most information and was the easiest to understand. It was also helpful because this is the main treatment that is used in America to treat CO poisoning.

Section 3: Statistics

<http://www.csia.org/PressRoom/ChimneyFiresCarbonMonoxideStats/tabid/63/Default.aspx>

This was the best Web site for statistics because of its clear graphs and up-to-date information. It was also helpful in explaining many of the terms that the other Web sites failed to explain.

Section 4: Consumer Information

<http://www.nlm.nih.gov/medlineplus/ency/article/002804.htm>

This was the most helpful Web site I had found while doing this project. It was very easy to use and had great information that was clearly explained. They also had graphs and diagrams to show you how carbon monoxide poisoning can affect you.