



SAFE SCIENCE: Be Protected!

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I. Does It Come Down To Playing in Dirt?

Allergies and asthma statistics seem to be indicating a rise in school age child having these types of health issues. Why is this happening? There are a number of theories that are being entertained. One intriguing theory is well noted by Jane Thurnell-Read who writes popular articles about health and well-being. At her U.K. website Healthandgoodness.com she wrote an article titled "Why Are Allergies On The Increase." Amongst several candidates for the increase in allergies, she notes the following:

Excessive Cleanliness

The obsession with the danger of 'germs' is thought to have led to an increase in allergies. Much of this obsession with cleanliness seems to be driven by the media and advertising. Headlines about 'killer bugs', and advertisements that claim a product kills even more germs have led many people to buy more and more products to wipe out these dangerous enemies. A view now gaining ground among many researchers and some doctors is that a certain level of dirt is good for us, particularly during infancy and early childhood when the immune system is maturing. (<http://www.healthandgoodness.com/article/are-allergies-on-the-increase.html>). Whichever that cause or causes allergies and asthma, science teachers need to be aware

Allergens In The Lab!

and be proactive in addressing allergens in the lab.

II. Allergens In The Lab!

There are several sources of potential allergens in the lab environment. For example, given that allergic reactions result from exposure to chemicals, the science laboratory is an especially likely place for allergens to be found. From the get go – latex burner tubing, gloves and goggle straps may be an issue. Latex gloves present the risk of latex allergies sensitivities. Especially of concern are powdered gloves where the use of corn starch tends to absorb the latex protein and disperse it when the gloves are removed. Alternatives to all of these sources can be successfully adopted and help reduce the exposure to this known allergen.

Some chemicals used in the lab also may provide allergen effecting sensitization issues for students and employees. For example, some individuals are sensitive to nickel products such as nickel metal, nickel chloride and nickel sulfate. Sensitivity to cobalt is another source including cobalt metal, cobalt chloride and more. Other more severe reactions including asthmatic attacks can be triggered by chemicals such as ammonia, chlorine, hydrogen chloride gases, isocyanates, and sulfur dioxide, to name a few candidates.

Biological material based allergies can also be a problem. Most common are allergies to plants and animals. In the plant arena, hay, peanuts, pollen, fungi/mold, poisonous plants like poison ivy and sumac, are a few which can be readily found. Animal allergies from rabbits, gerbils and others can also be a problem. Some allergies to peanuts may not just be limited to the solid food eaten. Peanut vapors can also be a problem! Use of hay, pollens, etc in the lab may initiate "hay fever" type symptoms.



III. Ideas to Address Allergens!

In efforts to address potential allergen issues,

science teachers might consider the following actions for a start:

1. Secure information from the school health office, parents and students relative



to allergies and asthma issues at the beginning of the academic year. Treat this medical information as confidential but necessary to your planning in order to make it a safer working environment for all.

2. In addition to input from the school health office, search the Internet for sites on how strategies to better address environmental issues in dealing with allergies! One such resource is AIR or the Allergy Internet Resource (see "Resources" at the end of this column for the Internet address) which has numerous sources of information on a spectrum of allergies!
3. Use the medical and other information to assess the learning environment – science laboratory.
4. Use the medical information to assess the learning activities.
5. Once assessed, plan and take action to help make the working/learning environment more in concert with allergen reduced or allergen free approaches.
6. Learn how to be aware of allergen symptoms/sensitivities of students and how to deal with them. In some cases – these can be life threatening!
7. Remember also that the field laboratory may have to entertain even more intense allergen level challenges. Always inform parents ahead of time relative to field activities and again ask for input should there be allergy issues or histories the teacher of which the teacher should be aware.

IV. In The End!

The noted suggestion list is a start to help raise the level of awareness on the part of science teachers relative to working with biological and chemical allergen hazards in the academic laboratory. Science is to be fun – but also safer by a well informed school administrators, science faculty and student body.

References:

AIR - Allergy Internet Resources – AIR;
<http://www.immune.com/allergy/allabc.html>

Australian Government Department of Health and Ageing:

http://agencysearch.australia.gov.au/search/search.cgi?collection=agencies&client=445556fb&cool0=41&cool1=15&cool2=5&cool3=0&stem=2&scope_disable=off&num_ranks=20&profile=health&query=allergies&Submit=go

National Institute of Allergy and Infectious Diseases: <http://www.niaid.nih.gov/Pages/default.aspx>

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LIVE LONG AND
PROSPER SAFELY!

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