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AUSTRALIAN SCHOOL SCIENCE
INFORMATION SUPPORT FOR
TEACHERS AND TECHNICIANS

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use of tears in a school practical

Posted by Anonymous on Tue, 2015-01-20 16:12

Use of tears in a school practical: Hi I am asking if it is OK to use tears in a school prac? The tears are generated by a student holding an onion near their eye. As the tears run down the face, the person blots them with a small piece of filter paper—made using a hole punch. The paper can then be placed on a bacterial lawn that has been spread across agar in a petri dish. Lysozyme in the tears kills the bacteria creating a clear area on the plate's surface. Only one person touches the paper and the tears—the person who generates them. It has been suggested that this is not allowed as it uses bodily fluids, but we have done it for years in SA. I would like to know its status in all states and territories in Australia, please.

Voting:



No votes yet

Year Level:

Senior Secondary

Laboratory Technicians:

Laboratory Technicians

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Answer by labsupport on question use of tears in a school practical

Submitted by sat on 23 January 2015

The situation regarding what is permitted for many different aspects of supporting the science curriculum in different states and territories in Australia is quite complex. There are many different layers of governance. There are:

1. National bodies, who develop model legislation, codes of practice and safety guides, such as Safe Work Australia and other policy makers;
2. State and territory regulators who enforce compliance with the Act and Regulations adopted by that region;
3. Educational jurisdictions in each state and territory, who establish additional policies for their own government school sector; and
4. Educational sectors outside the government schools systems who also establish their own policies.

There is currently no consistency across the educational jurisdictions and sectors concerning the use of body fluids. There appears to be no consistent definition of what constitutes a body fluid nor regarding which microbiological procedures are permitted throughout Australia.

To the best of our knowledge, this is the current status of what is permitted/prohibited in the state jurisdictions regarding the use of body tissues and fluids. Non-government schools may be able to choose whether or not to follow those policies in their region.

State/Territory	Use of human body tissue and fluids
ACT	Experiments involving the use of fresh human tissues or body fluids, e.g. cheek cell smears, blood typing, blood smears & urine samples are prohibited.
NSW	Experiments using fresh human blood products, urine and fresh human tissue, e.g. cheek cell smears should not be used. A student using their own saliva is permitted.
NT	A risk assessment must be conducted prior to the use of biological materials and all appropriate control measures must be implemented.
Qld	Subject to a Risk Assessment. Students must only use their own cheek cells.
SA	Subject to a Risk Assessment. Students must only use their own cheek cells.

State/Territory	Use of human body tissue and fluids
Tas	Testing of body fluids, i.e. blood, vomit, urine and faeces, must not be conducted in schools by staff or students. Experiments that involve saliva or cheek cells may be undertaken, but appropriate risk management and disposal procedures need to be in place, including consideration of whether blood is visible in the saliva.
Vic	Any uses of body fluids/cells are subject to individual school risk assessment. Taking of blood is banned.
WA	Experiments on any human body fluid or tissue including cheek cell and skin scrapings are banned.

Regarding the use of tears in an activity, we are reluctant to recommend the use of tears in a school science activity until we receive authoritative advice otherwise, particularly considering the recent study which confirmed that tears can transmit the hepatitis B virus (HBV).^[1] It is important to remember that schools may not be aware of potential infectious diseases that staff or students may have and whilst these situations may be rare, there may also be other people in the vicinity who are immuno-suppressed that are at greater risk of acquiring infections.

We recommend that schools considering the use of human body fluids, tissues or microbiological organisms carefully evaluate all of the risks. We recommend reading the following general information about biological materials, hepatitis and HIV viruses as well as infection control guidelines developed by Sydney University:

- <http://www.safeworkaustralia.gov.au/sites/SWA/about/Publications/Documen...>

In particular see page 21 *“Poor understanding of biological hazards leads to poor risk assessments in workplaces”*

- <http://www.safeworkaustralia.gov.au/sites/SWA/about/Publications/Documen...>

In particular, see Sections 2.3 Activities and occupations where a hazard may exist, Section 4.2 Safe working procedures, 4.3 Standard Precautions, Section 4.4 Risk control strategies for certain occupations and Appendix E Principles of Standard Precautions.

Schools have been identified as places where people could be exposed to diseases such as Hep B and HIV. (pp. 6-7) All body fluids/substances should be treated as infectious and risk control strategies should be implemented. (p19).

INFECTION CONTROL PROCEDURES - University of Sydney

It is vital that a risk assessment for every activity is conducted by a person with appropriate knowledge and who considers all the possible risks and implements the appropriate control measures to not expose others to potential hazards. All schools should conduct a site-specific risk assessment prior to performing any of these procedures.

Science ASSIST aims to provide advice that promotes good practice to support the Australian Curriculum: Science. A procedure cannot be safe in one region and not in another. It is also

aware of a great diversity in science facilities as well as in staff training in the area of microbiology and knowledge of infectious diseases. As a result of all of these different factors, Science ASSIST is currently seeking advice concerning the development of detailed safety guidelines regarding the use of body tissue and fluids as well as microbiology.

[i] Komatsu, H., Inui A, Sogo T, Tateno A, Shimokawa R, Fujisawa T. 2012. Tears from children with chronic hepatitis B virus (HBV) infection are infectious vehicles of HBV transmission: experimental transmission of HBV by tears, using mice with chimeric human livers. *J Infect Dis.* 2012 Aug 15; 206(4):478-85. doi: 10.1093/infdis/jis293. Epub 2012 Apr 16.

[ii] Safe Work Australia. 2011. National Hazard Exposure Worker Surveillance: Exposure to Biological Hazards and the Provision of Controls against Biological Hazards in Australian Workplaces. <http://www.safeworkaustralia.gov.au/sites/SWA/about/Publications/Documents...> CC BY NC 3.0 AU <http://creativecommons.org/licenses/by-nc/3.0/au/>

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