

Should we use alcohol hand gel in early childhood services?

By Bridget Gardner | 12 June 2008
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Alcohol hand-in pre-schools

"I was reading our local DEECD newsletter and found this snippet: "Hand washing hint - In an aim to maintain hygienic practices and reduce wastage of water, a kindergarten has reported great success in introducing a pre-snack time routine of children using anti-bacterial hand gel to wash their hands."

This concerned me as I thought the use of a chemical such as the anti-bacterial gel has the potential to be environmentally hazardous as well as possibly harmful to the children's digestive systems. However, the justification that there are water saving advantages is significant.

What do you think? Are the water savings adequate justification for the use of an anti-bacterial gel? I would be very interested in your thoughts on this if you could get back to me when you have a chance please."

Bridget's answer:

Thank you for raising this concern. This is also of great concern to me. I do not think that the medical profession realise how quickly the general public are picking up on the use of anti-bacteria gels.

I was quite surprised to note this came from the Education Department, as it definitely runs contrary to guidelines from the National Health and Medical Research Council (NHMRC) and the Royal Children's Hospital.

This raises several questions. Do they save water, are they safe, are they appropriate or necessary for children, and will it keep children healthy?

Does alcohol gel save water?

Firstly, saving water is definitely a big issue, but should not be the only factor to consider when making decisions. The toxicity of the chemicals as you rightly point out, and the environmental impact of manufacturing and transporting all those plastic bottles, need to be thrown into the mix as well.

Another often forgotten fact is that the manufacturing process requires a lot of water. This is referred to as 'embedded water'. As it takes 2litres of water¹ to make a single gram of paper, it is quite reasonable to assume that washing hands under running water may not use more than the embedded water in the antibacterial gel - certainly not enough to make water saving the sole decision for it.

Is it safe for children's hands?

You need to find out what ingredients are in the antibacterial gel. If it is straight ethanol (alcohol) with some form of skin softener it is not as harmful as you may fear. The biggest health concern from alcohol gel is that it can easily dry out hands, causing skin irritation and chapping that more easily allows the germs to enter the body - which, of course, defeats the whole purpose.

Avoid hand gels that contain the anti-bacterial agent Triclosan, (often found in 'antibacterial' liquid soaps and detergents). According to NICNAS², Triclosan has been shown to be toxic and damaging to the reproductive system of aquatic species, and may bioaccumulate and persist in the environment.

In Sweden, a scientific study reported Triclosan in three out of five randomly selected human breast milk samples. Scientists are unsure as to the results of this toxic bio-load in humans.

Is alcohol hand gel appropriate?

Anti-bacterial gels were *never* designed to replace hand-washing but were specifically created for health care workers to apply to their already clean hands (no soil on them) to stop spreading multi drug-resistant bacteria (MRA) from one patient to another. There is no such threat of antibiotic resistant bacteria in the early childhood setting or the wider community.

The NHMRC³, and the Centre for Disease Control USA⁴ (CDC), both clearly state that antibacterial gels **do not** replace proper hand-washing with soap and water, to remove soil from hands.

Proper hand-washing requires water, soap and agitation to effectively wash away soil, and the germs that live in the soil, from our hands. Children's hands get dirty therefore they need to be washed with soap and water to remove that dirt, especially before eating or handling food.

In NHMRC guidelines for the prevention of transmission of infectious diseases in health care, that the purpose of alcohol-based hand gels is as an 'adjunct', not a replacement, to traditional hand-washing with soap and water. In NHMRC's Staying Healthy in Childcare Guidelines ed 4:

"Antibacterial hand washes should not be routinely used in childcare centres as they are unnecessary and may encourage the development of resistant bacteria. Alcohol-based hand-cleaners can have a role if proper hand washing facilities are not available (e.g. on excursions). After several uses of an alcohol-based hand cleaner, you will need to wash your hands properly with liquid soap and water."(p4)⁵

Will they make children healthier?

Perhaps the most the important question, and one largely omitted from hygiene debates, is whether using them instead of washing with soap and water make them healthier? There is no evidence to suggest this is the case.

Furthermore, antibacterial gels on children's hands will not just kill the 'bad' bacteria (disease causing), but it will wipe out the natural skin flora or 'good bacteria'. Children need a certain level

of exposure to all bacteria, good and bad, in order for their immune systems to grow strong.

Many in the medical profession raise the concern that the overuse of anti-bacterial agents could be partly responsible for increasing development of allergies and asthma in children, (CDC)⁴ and may further encourage the development of resistant bacteria. In the case of Triclosan, there is a real concern that if we over-use antibiotic agents as a preventative measure, they will be less effective as a treatment when we are sick. ⁶

Personally I also believe that such a quick and easy, but ultimately inadequate method could breed complacency and not teach children good hand-washing skills as an essential part of healthy hygiene.

References:

¹ *Keeping the Water Flowing*, by HydroScience Consulting. Retrieved 11.06.08: http://www.lgsa-plus.net.au/resources/documents/2007WaterMgtConf_GidiAzar_HydroScience_070816.pdf

² Department of health and Aging. NICNAS. *Update on the assessment of the priority existing chemical triclosan* Retrieved 11.06.08: http://www.nicnas.gov.au/industry/existing_chemicals/PEC_Declarations/updatetriclosan072006.pdf

^{3 & 7} The Australian National Health and Medical Research Council (NHMRC) *Infection control guidelines for the prevention of transmission of infectious diseases in the health care setting*. Retrieved 09/06/08 [http://www.health.gov.au/internet/main/publishing.nsf/Content/2804E9F9B95357F7CA256F190003B4DA/\\$File/part3a.pdf](http://www.health.gov.au/internet/main/publishing.nsf/Content/2804E9F9B95357F7CA256F190003B4DA/$File/part3a.pdf)

⁴ *Antibacterial Household Products: Cause for Concern*, by Stuart B. Levy Tufts University School of Medicine, Boston, Massachusetts, USA Retrieved 09/06/08 http://www.cdc.gov/ncidod/eid/vol7no3_supp/levy.htm

⁵ The Australian National Health and Medical Research Council (NHMRC) December 2005 *Guidelines for Staying Healthy in Child Care* - 4th Edition, NHMRC.

⁶ *Antibiotic Use and Resistance: What Lies Beneath!* By Teresa M. Barbosa and Stuart B. Levy, Center for Adaptation Genetics and Drug Resistance, Tufts University School of Medicine, Boston, Massachusetts, 02111 USA. APAU Newsletter, Volume 19 #1. Retrieved 23/06/08 http://www.tufts.edu/med/apua/Newsletter/APUA_v19n1.pdf