



February 2014

IFH Newsheet (www.ifh-homehygiene.org)

CONTENTS

1. Latest from IFH
2. News and new research
3. Conferences

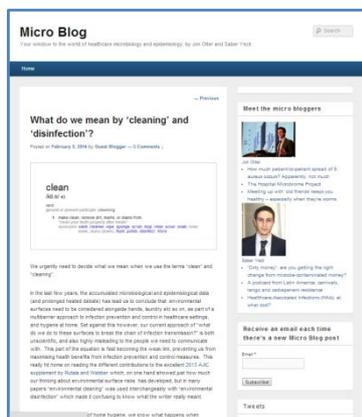
1. Latest from IFH



Visit the “new look” IFH Website

Take a look at our revised IFH website. The structure is basically the same, but we’ve made it simpler to navigate, and easier to find what you need. There has also been behind-the-scenes work done to increase responsiveness and help bring even more visitors to the site. In 2013, 16,700 people visited the website, with about 56,700 page views. To view the new website, go to www.ifh-homehygiene.org. The IFH website now contains the largest collection of scientific, professional and consumer information and materials on hygiene at home and everyday life. This includes **scientific reviews** and the latest **research publications** on hygiene, and hygiene issues such as the hygiene hypothesis. It also contains **hygiene guidelines and training resources** for use by healthcare

workers, and plain language **fact and advice sheets**, which address specific issues like MRSA, influenza, laundry, dealing with floods and much more. Although IFH does not produce materials for consumers itself, the website provides an area where you can browse and find hyperlinks to advice leaflets and websites produced by other agencies, which are designed to meet **consumer’s** needs. The site is regularly updated with the **latest news** and published research about home and community hygiene.



What do we mean by ‘cleaning’ and ‘disinfection?’ – Have your say!

What do we mean when we use the terms “clean” and “cleaning”?

In the last few years, data have shown that hands, surfaces, laundry etc. all need to be considered together as part of a multi-barrier approach to preventing and controlling infection in healthcare settings and at home. However, our current approach to "what we do to these surfaces to break the chain of infection transmission?" is unscientific, and also misleading to the very people we need to communicate with. From our IFH experience, if we advise consumers to "clean" a surface or their hands, they will clean until the visible dirt is gone – and we know that this is not

necessarily enough. We currently have no way to advise/communicate that "this surface needs to be cleaned to a level that breaks the chain of infection". The same problems arise when communicating with hospital cleaning staff. For the last 14 years, IFH has successfully used the words "hygienically clean" to mean "microbiologically safe", and "hygienic cleaning" to describe how to reach this complete cleaning – which could be soap and water with rinsing – or cleaning disinfection, or a combination of both. What is the answer? If we do not find a clearer way to communicate, we will never get the public and healthcare workers to adopt effective behaviours. To read more and have your say, go to: <http://www.micro-blog.info/2014/02/what-do-we-mean-by-cleaning-and-disinfection/>

Coping with floods, cleaning up afterwards – and staying healthy – IFH Fact/advice sheet

IFH has produced a fact/hygiene advice leaflet to provide advice and background information on staying free from infectious disease during and after flooding, including cleaning up the home after the flooding has subsided. This briefing material has been produced for healthcare professionals, the media and others who are looking for some background understanding of hygiene issues related to flooding and/or are responsible for providing guidance to the public on coping with hygiene issues associated with flooding. The fact sheet can be found at: <http://www.ifh-homehygiene.org/factsheet/coping-floods-cleaning-afterwards-%E2%80%93-and-staying-healthy>

2. News and New Research



The “hygiene hypothesis” is dead, but the underlying “microbial exposure” concept is very much alive and kicking!

In a new review Professor Graham Rook, shows why the hygiene hypothesis is now a misleading misnomer – it’s no longer a hypothesis and it’s not about “hygiene”. This latest review sets out, in the clearest, most compelling, and well supported way yet, a framework showing how lifestyle and medical changes over the past two centuries have worked together to inadvertently deprive us of key microbial exposures, and trigger an epidemic of allergies and other chronic inflammatory diseases.

If we are going to tackle this problem however, we have to stop talking about it as a consequence of our “modern obsession with cleanliness”.

The problem is that new thinking is still based on the same crucial underlying insight (that microbial experience modulates our immune systems). However, the initial idea, which had gotten the public’s attention, and involved the idea that relevant microbes are common virus infections of childhood and are due to “too much hygiene”, no longer holds.

The new review shows that the requisite microbes to which our immune system has an evolved dependence are the so called Old Friends from our evolutionary past (human and animal commensals, organisms from the natural environment, and “Old” infections) that persisted in isolated hunter-gatherer groups as relatively harmless subclinical infections or carrier states. In contrast, the “crowd infections” (such as common childhood virus infections) evolved later when urbanisation led to large communities. They did not evolve immunoregulatory roles because they either killed the host or induced solid immunity, and could not persist in hunter-gatherer groups.

The review traces how sequential changes over the past two centuries – sanitation, water, dietary changes, caesarean section, less breast feeding, antibiotics, and less contact with animals and green spaces – have accelerated the loss of exposure to the Old Friends microbes. This effect is most pronounced in individuals of low socioeconomic status who live in urban communities and lack contact with rural environments. The microbial exposure is vital because these organisms interact

with the regulatory part of our immune system. Without this, it can over-react by causing asthma and hay fever, or attack our own tissues causing autoimmune diseases such as multiple sclerosis.

While concerns about CIDs developed, so have concerns about infectious diseases. Because of urbanisation, there still continues to be exposure to crowd infections, which means that gastrointestinal, respiratory, skin and other infections circulating in the community still exert a heavy toll on health and prosperity. These concerns are partly driven by the growing immuno-compromised population living and being cared for in the community. More increasingly, healthcare is delivered at home. The prevention of global pandemics and the tackling of antibiotic resistance are global priorities, and hygiene is also a key cornerstone to the containing of these threats.

The need is to develop an approach to hygiene that minimises exposure to pathogens whilst sustaining normal exposure to the microbes required by our immune system, which proves to be a challenge since they occupy the same habitat. In the future, we will have to persuade people to view their microbial world differently.

Professor Rook concludes by stating that “we hope these insights will help focus attention on the need for increased hygiene, coupled with innovative design for homes and sustainable cities that promote appropriate microbial exposures.”

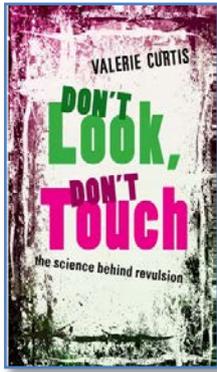
The review is free to download. For more details go to <http://www.ifh-homehygiene.org/best-practice-review/microbial-%E2%80%9Cold-friends%E2%80%9D-immunoregulation-and-socioeconomic-status>

A new food hygiene intervention study in Nepal

OmPrasad Gautam from the London School of Hygiene and Tropical Medicine has just completed a food hygiene intervention study in Nepal. He writes that “although instinct tells us that proper food hygiene practices may prevent disease, there is little rigorous evidence to support this premise from developing countries. Very few intervention studies have been carried out on the impact of food hygiene interventions for the reduction of childhood diarrhoea and malnutrition. A simple and replicable food hygiene intervention, which can be implemented by the WASH, health and nutrition sectors *at scale* has yet to be tested. My PhD research aims to fill this gap”.

Om’s study involved assessing the effect of the intervention on mothers’ food hygiene practices, on the levels of microbiological contamination in food and on diarrhoeal diseases burden. Emphasis was placed on community mobilisation, inter personal communication and print media. The food hygiene promotion package included various innovative tools and techniques to motivate mothers to improve five key food hygiene behaviours. The behaviours were chosen after assessing current food hygiene behaviours, and identifying critical control points. These included thorough cooking of a child’s food, the cleaning of serving utensils, handwashing with soap before feeding (mother) and eating (child), correct storage and thorough re-heating of leftover or stored food. To find out more, go to Om’s blog at:

http://www.sharerresearch.org/NewsAndEvents/Detail/om_blog_food_hygiene_study



New book! Don't look, don't touch: the science behind revulsion

This new book by Dr Valerie Curtis of the London School of Hygiene and Tropical Medicine draws on the work of biologists and animal behaviourists to explain the evolutionary value of disgust and the reasons why it matters. Dr Curtis explains how we can use emotions such as disgust for good purposes, including reducing infectious diseases worldwide. In this book, she presents a powerful theory based on recent experiments: that the origins of disgust lie in the avoidance of parasites. However, in humans and their complex social lives, it seems that the disgust response has spread much wider than its original health-promoting role. Understanding its evolutionary origins helps us both to counterbalance its harmful manifestations, such as sexism and xenophobia, and exploit it to good use, for example harnessing of

the potent disgust response in promoting hygiene and health care programmes worldwide. For further details go to: <http://ukcatalogue.oup.com/product/9780199579488.do>



Bacterial contamination on your shopping trolley

A study of 85 shopping trolley handles in parking lots of grocery stores, tested in five metropolitan areas across the US, identified *Escherichia coli* on 18 trolleys (carts). It is well-known that the contamination of raw meat products with bacterial enteric pathogens, such as Salmonella, Campylobacter and *E. coli*, occurs on a regular basis, and therefore the findings suggest that exposure to enteric pathogens via shopping trolley handles occurs on a regular basis. The authors assessed that the total bacterial levels on shopping trolley handles were greater than those found in public restrooms and other

public places and objects that are commonly touched in these environments (airports, bus stations, public bathroom, shopping malls, etc.), and concluded that supermarkets should consider offering complimentary sanitizing wipes for shoppers. The full report can be found in Food Protection Trends 2012:32;27-9.



“Dirty money”: are you getting the right change from microbe-contaminated money?

A blog from Saber Yezli gives an excellent summary of data on potential risks for spreading infection via banknotes. The blog summarises the results of eight studies of bank notes carried out in different countries, which showed that a variety of potentially pathogenic strains of bacterial and fungal spp together with enteric parasites can be found. Yezli reasons that “in reality, we shouldn’t be surprised that bank notes and coins are contaminated with various bacteria. After all, we hardly expect them to be sterile. Our own hands are colonised with millions of bacteria and money is the most frequently passed item in the world.” But he also quite rightly says that “the question to be asked, given the above, is: *does it matter if money is contaminated?* Disinfection of the currencies in banks with UV light, supersonic or chemical means, producing bank notes from materials which inhibit bacterial growth or material with antimicrobial activity as well as replacement of traditional methods of trading with electronic money transactions, have all been proposed.” However, he concludes that “personally I think for now, proper hand hygiene and overall hygiene remain the best ways to counter this problem.” Hygiene is everyone’s responsibility. Maybe the solution is more money laundering! The blog can be found at: <http://www.micro-blog.info/2013/12/dirty-money-are-you-getting-the-right-change-from-microbe-contaminated-money/#>

Study reveals surfaces may be a transmission route for *S. pneumoniae* and *S. pyogenes*

Whereas it has been generally believed that *S. pneumoniae* and *S. pyogenes* are only transmitted by the airborne route, a new study reveals that this may not be true. Children, the elderly, and others who are immunocompromised are especially vulnerable to infection by streptococci spp. *S. pyogenes* causes strep throat in children, and skin and other serious infections in children and adults. *S. pneumoniae* is a leading cause of childhood ear infections, as well as respiratory infections in children and the elderly. In developing countries, pneumonia and sepsis, kill up to one million children each year. In this new study, researchers found that while planktonic cells rapidly lose viability on hands and surfaces, biofilm bacteria remain viable over extended periods outside the host and remain infectious in a murine colonisation model. To explore the extent of contamination that children might be exposed to, items in a daycare centre were sampled and demonstrated high levels of streptococci of both species on soft and hard toys, books, hard surfaces, and crib linens. *S. pneumoniae* were identified on four/five soft toys in the facility. The study can be found at: Infection and Immunity, published online ahead of print, 26 Dec 2013, doi:10.1128/IAI.01310-13.

3. Conferences and Teleclasses



Workshop “Hygiene requirements and measurements in dishwashing” 1st and 2nd of April, 2014, University of Bonn, Household and Appliance Technology Section, Germany

The purpose of this international workshop is to collect and share relevant knowledge about hygiene aspects due to dishwashing. Furthermore, ways of establishing measurement standards and defining hygiene requirements should be discussed. During the two-day workshop, relevant topics concerning hygiene in homes will be presented by international experts and academics to build a sound basis for successful and fruitful discussions. For more information go to <http://www.landtechnik.uni-bonn.de/aktuelles/workshop-hygiene> or contact Rainer Stamminger (stamminger@uni-bonn.de)

Free teleclass: “Are we too clean for our own good?” The hygiene hypothesis and its implications for hygiene, lifestyle and public health

This teleclass by Professor Sally Bloomfield will take place on April 24th 2014, from 1:30 pm–2:30 pm in New York/Toronto...6:30 pm in London. The main learning objectives are to:

- Understand the hygiene hypothesis: how our understanding of the link between microbial exposure, and allergies and other chronic inflammatory disorders is now developing
- Consider the factors which contribute to reducing the microbial exposure required for immune regulation
- Consider the implications of the new understanding of the hygiene hypothesis for hygiene practice, life styles and public health

To register go to: <https://webbertraining.com/schedulep1.php?command=viewClass&ID=1189>



The science and behaviour behind hand washing - at home, work and on the move. Royal Society of Public Health 3rd April 2014, London

Why can't we sustain the impact beyond Global Handwashing Day (15 October) or the regular Government campaigns? Can new behavioural approaches make more people wash their hands? This conference will examine whether some sectors of society are disadvantaged by poor provision of handwashing

facilities, and address ways of promoting both facilities and good handwashing practice. It will also look at ways to measure health and economic consequences of the failure to wash hands. The conference provides an excellent opportunity for those working in the hand hygiene and hygiene design industries, healthcare, food, education and public health to catch up on research and current thinking on handwashing, with experts from the health protection, food safety, behavioural and economical fields. For more details go to: <https://www.rsph.org.uk/en/courses-conferences-and-events/events/index.cfm/the-science-and-behaviour-behind-hand-washing-at-home-work-and-on-the-move>