

The Facts – Hand Hygiene

Following are extracts from research studies that relate to Food Safety or Hand Hygiene. We have also included some interesting fact and figures relating to food safety.

Fact and Figures

- One in five people do not wash their hands prior to preparing food at home
- Only one in ten washes their hands for the recommended 30 seconds
- One in six “wash” their hands with a quick rinse of cold running water¹
- 800 new cases of food poisoning occur *every hour* in Australia²
- One in 5 people don’t wash their hands properly after going to the toilet³
- One in 10 food handlers do not wash their hands when necessary, and one in 20 of this group do not cover open wounds with waterproof dressings!
- 17% of food businesses do not have sufficient hand washing facilities
- Over one in 10 food businesses did not clean and sanitise food contact surfaces and utensils before using them where it was appropriate to do so.⁴
- In the first 11 months of 2002 State and Territory health authorities received the following notifications of communicable diseases⁵:
 - Campylobacteriosis – 12,819
 - Salmonellosis (NEC) – 7,146

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1. Hygiene risks in the home. An evaluation of cross-contamination in the domestic kitchen. Research by Microtech Laboratories 1997.
 2. Food Standards Australia New Zealand Media Release, November 14,2002 – Food Enterprises for a Dynamic Region
 3. Hand Washing in public toilets. Conducted by Market Research Associates November 2000.
 4. 2000/2001 National Food Safety Benchmark Study, ANZFA
 5. Communicable Diseases Network Australia – National Notifiable Diseases Surveillance System, 29 November 2002.

Food Safety

How Tea-towels are used in Commercial Kitchens

The objective of this research is to look at tea towel usage patterns in commercial kitchens and to analyze what potential risks this usage could attract.

Research Findings:

- Tea towels, aprons and paper towels were almost used universally in commercial kitchens.
- Of those interviewed, 90% used tea towels as a kitchen aid
- On average, tea towels are used 12 times a day to dry hands or to wipe a face
- One in three kitchens claimed to use a tea towel for multiple activities - handling hot utensils (47%), cleaning hands (4%), cleaning wet spills (10%), cleaning work benches (14%)

In a shift, a person would use a tea towel to:

- Handle hot utensils - 5 times
- Cleaning hands - once
- Cleaning up wet spills - more than once
- Cleaning up work benches - two to three times

Tea towels almost always get wet when in use (96%) and most continue to be used after they are wet. The majority are laundered only at the end of each shift (47%) or within a day or more (11%) in comparison to the minority that are laundered after each use (25%) or when they become wet (16%).

Chefs and supervisors working in 100 kitchens, with more than four kitchen staff and using tea towels were surveyed. In total this research examines the behavior of 1092 kitchen staff. The business types surveyed are as follows: Aged care facilities and hostels 40; Hospitals 17 - public 10, private 7; Clubs 33 and Hotels 10.

On average these businesses had five staff per shift; 12 staff per location and 2.3 shifts per day. An average of 325 meals are prepared per day per location, which gives a total of 32,500 meals per day - 227,500 meals per week. If one third of meals could be at risk, this totals (3.954) 4 million meals per year. It was noted that an average of 32 tea towels are used per day per location.

Source:

"Hygiene Habits in Commercial Kitchens"
Conducted by Market Research Associates, November 2000
Endorsed by Food Safety Information Council

Tea towels - UK research - use when wet

According to Bloomfield and Scott (1997), wet cleaning cloths can harbour potentially harmful organisms and become breeding grounds for bacteria and the need for disinfection before and during use is critical.

Scott and Bloomfield (1990) found that when contaminated cloths are applied to surfaces such as those in the kitchen, organisms can be transferred to the hands in numbers high enough to cause infection.

Harmful organisms can not only survive, but continue to grow in contaminated cloths, which remain damp. Bloomfield and Scott (1997).

Source:

SF Bloomfield and E Scott Cross Contamination and infection in the domestic environment and the role of chemical disinfectants, Journal of Applied Microbiology 1997, p 83.

Hand Hygiene

Australian Handwashing Habits

Research Objectives:

- What are the hand washing habits of people away from home?
- What proportion of people wash or don't wash hands after using the toilet?

Research Findings:

- Two in five people did not wash and dry hands after using the toilet
- Soap was rarely used with most people just wetting their hands
- Men were least likely to wash and dry hands with almost half mature men not doing so
- Males were almost twice as likely not to wash and dry hands as women
- Pre teen & teen boys and men over 55 were the least likely to wash and dry their hands
- Girls became dramatically more consciousness of hand hygiene as the hit their teens

Methodology:

This research used an observation method. The observational study was conducted in male and female public toilets in two major NSW shopping centres over both Saturdays and Sundays at each location. The sample size for the study was 979 people.

Source:

"Handwashing Hygiene in Public Toilets"
Conducted by Market Research & Associates, November 2000
Commissioned by Kimberly-Clark Australia

Handtowels vs Other Hand drying Methods

Objectives:

- What are people's preferred method of hand drying when away from home

Research Findings:

- 1 out of every 5 who actually washed hands did not dry them
- Paper towels were the preferred method of hand drying over air blowers or using their clothing in public toilets
- Paper dispensers were installed at the observation site to check preference against air blowers
 - 69% voluntarily used paper towels from dispensers to dry hands
 - Only 18% used air blowers
 - 13% used their clothing
- Preference for paper towels was equal for both sexes
- Young and middle adults of both sexes had the highest preference for paper towels (around 75%)

Methodology:

An observation study of 979 people combined with focus group discussions were held to examine attitudes to hand hygiene. Four focus groups were undertaken; Two female and two male groups, ranging in age from 25 -55 years.

What motivated people to prefer paper towels (focus groups)

- Because they are 'personal' and untouched but most of all because it was seen as the fastest method of drying hands.
- People also like the sense of 'closure' from drying with a paper towel.

Given the strong preference for using paper towels researchers claimed that hand hygiene compliance would possibly decrease if paper dispensers were not available.

Source:

"Handwashing Hygiene in Public Toilets"
Conducted by Market Research & Associates, November 2000
Commissioned by Kimberly-Clark Australia

Hand washing and Hand drying

The key to hygienic hand washing is not just the use of soap and water but more importantly effective hand drying.

There are generally three methods of hand drying, they include are hot air blowers, cloth cabinet roll towels and single sheet disposable paper towels.

Surprisingly, hot air blowers actually increase bacteria levels by up to 500%. It is the least effective hand drying solution. It's unhygienic and unproductive to use a hot air blower in a food preparation environment.²

Most people do not dry their hands for long enough under a hot air blower. Damp, warm hands provide the perfect environment for bacteria to multiply. What's more, bacteria can be found in and around the inlet and outlet nozzle, turning the blower into a 'germ incubator'.^{1, 2}

A fresh cabinet towel however, does reduce the level of bacteria from hands. But, once the towel is in use, bacteria are accumulated from other users. Cabinet towels can become 'community towels'. Cross infection may occur when a portion of the towel is reused thus spreading bacteria to the hands and face. Cabinet towels operate on a 'shared stock system' therefore towel customers will be unaware as to who or what industry previously used the towel they currently have.¹

Quite simply, the most effective hand drying method is the use of a single sheet disposable paper towel.

The rubbing or abrasive action of a paper towel actually removes high concentrations of bacteria from hands after washing. A paper towel is disposable and never shared. It allows you to dry the tips of your fingers, the web, palm and back of your hand with ease. Paper towels are easy to store and easily maintained. They remain the preferred method of effective hand drying in the food business.^{1, 2}

Sources:

1. Hand Drying Hygiene Facts - University of Westminster.
2. Evaluation of Risks Related to Microbiological Contamination of Ready-to-eat Food by Food Preparation Workers and the Effectiveness of Interventions to Minimise Those Risks. - Jack Guzewich, RS, MPH. Marianne P. Ross, DVM, MPH. (1-29).

Bar Soap vs Liquid Soap

The single most effective way of preventing the spread of bacteria is to wash your hands. Hand washing stops cross contamination, which leads to food poisoning. Research has shown that how we wash our hands determines how clean they become.^{1, 2}

The most common hand-cleaning agents are bar soap and liquid soap in disposable plastic containers. When in use, bar soap remains moist for long periods of time. It's usually kept in a container, on or next to a wash basin. More often than not, it resides in surface water. An environment which provides the perfect opportunity for bacteria and organisms to grow. Most bars of soap in communal areas are used by a number of different people. This means that one bar of soap can be in direct contact with skin bacteria from more than one person. Cross infection can and does occur under these circumstances.²

Liquid soap on the other hand is much cleaner to use. Liquid soap is dispensed straight from a plastic container. It has not been exposed to skin bacteria or other contaminants. As a result, cross contamination is not likely to occur, providing you with a cleaner, more hygienic alternative.²

Sources:

1. Evaluation of Risks Related to Microbiological Contamination of Ready-to-eat Food by Food Preparation Workers and the Effectiveness of Interventions to Minimise Those Risks. - Jack Guzewich, RS, MPH. Marianne P. Ross, DVM, MPH. (1-29)
2. Microbial Flora of In-Use Soap Products - Mollie E. McBride. (338-341).

Washroom and Toilet Bacteria

Washrooms and toilets are great places for bacteria to grow.

Did you know that every time a toilet is flushed, with the lid up, a fine aerosol mist is sprayed into the air, over an area of up to 6 square metres?

This mist contains different types of faecal bacteria like *E.coli* and *Staphylococcus* which can cause sickness and discomfort.^{1, 2}

Research has shown that the highest concentration of harmful bacteria found in toilets and washrooms are located in and around moist areas. These include urinals, toilet seats, tap handles, the inside handle of an entrance door or in wash basin overflow areas. Up to 90% of the area surrounding a wash basin is contaminated with a high concentration of bacteria. Cross infection via the body and hands is common and can result in food poisoning.¹

Regular, sanitary cleaning of washrooms and toilets is the only way to reduce bacteria numbers and prevent cross contamination.¹

Sources:

1. A bacteriological survey of washrooms and toilets - M.F. Mendes and D. J. Lynch. (183-189).
2. Food Safety Standards Costs and Benefits - Australia New Zealand Food Authority. (13-42).