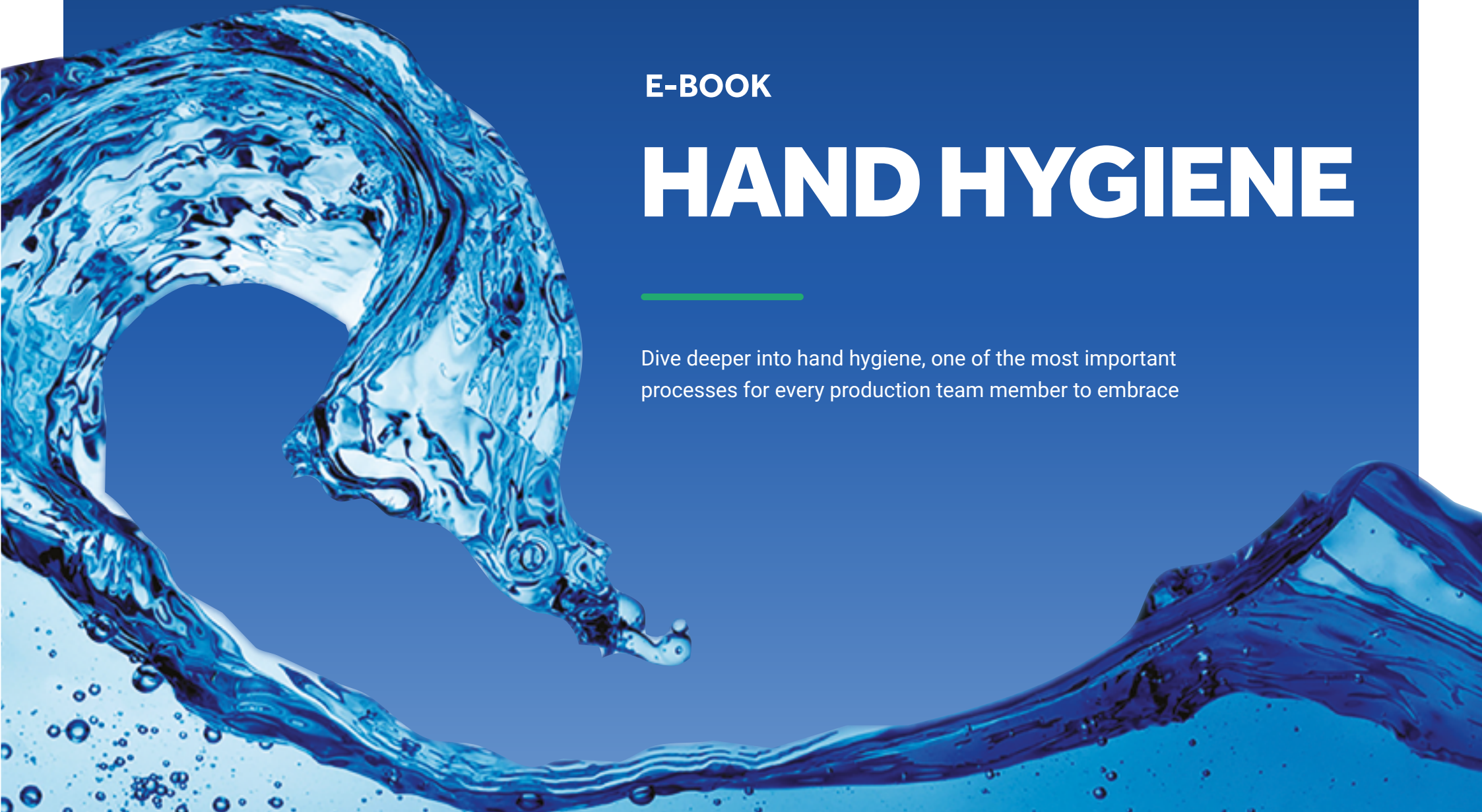
MERITECH



E-BOOK

HAND HYGIENE

Dive deeper into hand hygiene, one of the most important processes for every production team member to embrace

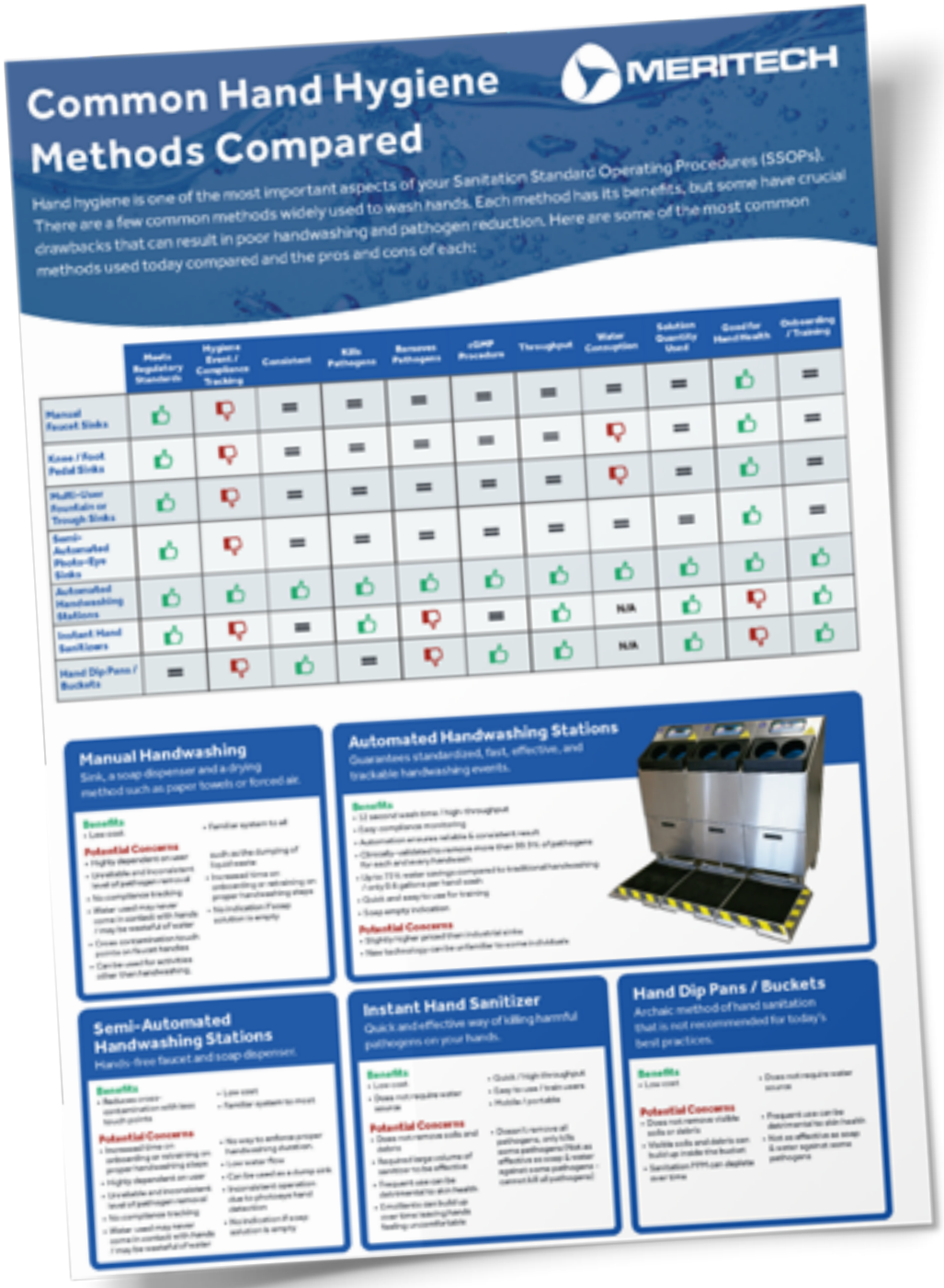
Introduction

In the first module of the Employee Hygiene Toolbox, we introduced you to the importance of creating a hygiene culture and the basic steps for creating one at your facility. In the second module and this eBook, we dive deeper into hand hygiene, one of the most important processes for every production team member to embrace. In this eBook we compare the most commonly used handwashing methods, review the importance of skin health for hand hygiene, and explore how to reinforce good hand hygiene behaviors with employees.

Table of Contents

SECTION 1

Hand Hygiene Methods Compared



Hand hygiene is one of the most important aspects of your Sanitation Standard Operating Procedures (SSOPs). Anytime an outbreak occurs, one of the first and strongest recommendations you hear is “wash your hands often”. Even though we know that it is the best defense against pathogens, many foodborne illnesses are directly attributed to ineffective handwashing.

There are a few common methods widely used to wash hands. Each method has its benefits, but some have critical pitfalls that can result in ineffective pathogen reduction (and sometimes, increased contamination risk!) Here are some of the most common handwashing methods used today and the pros and cons of each:

|← Download the hand hygiene comparison guide also included in Module 2

Manual Hand Hygiene

The most well-known and commonly-used handwashing method involves manually washing hands in a traditional sink where the faucet is manually turned on and off and soap is manually dispensed.

Benefits:

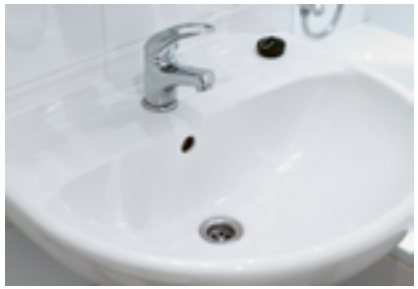
- Low cost
- Familiar system to all

Potential Concerns:

- Highly dependent on user
- Unreliable and inconsistent level of pathogen removal
- No compliance tracking
- May be wasteful of water as water used may never come in contact with hands
- Cross contamination touch points on faucet handles
- May be wasteful of water as water used may never come in contact with hands
- Unreliable and inconsistent level of pathogen removal

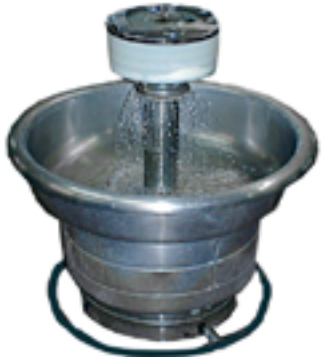
Manual Hand Hygiene

Manual handwashing sinks serve as a fair low-cost option that is familiar to all. No matter the style, the mechanics of these main types of manual handwashing sinks are essentially the same:



Manual Faucet Sinks

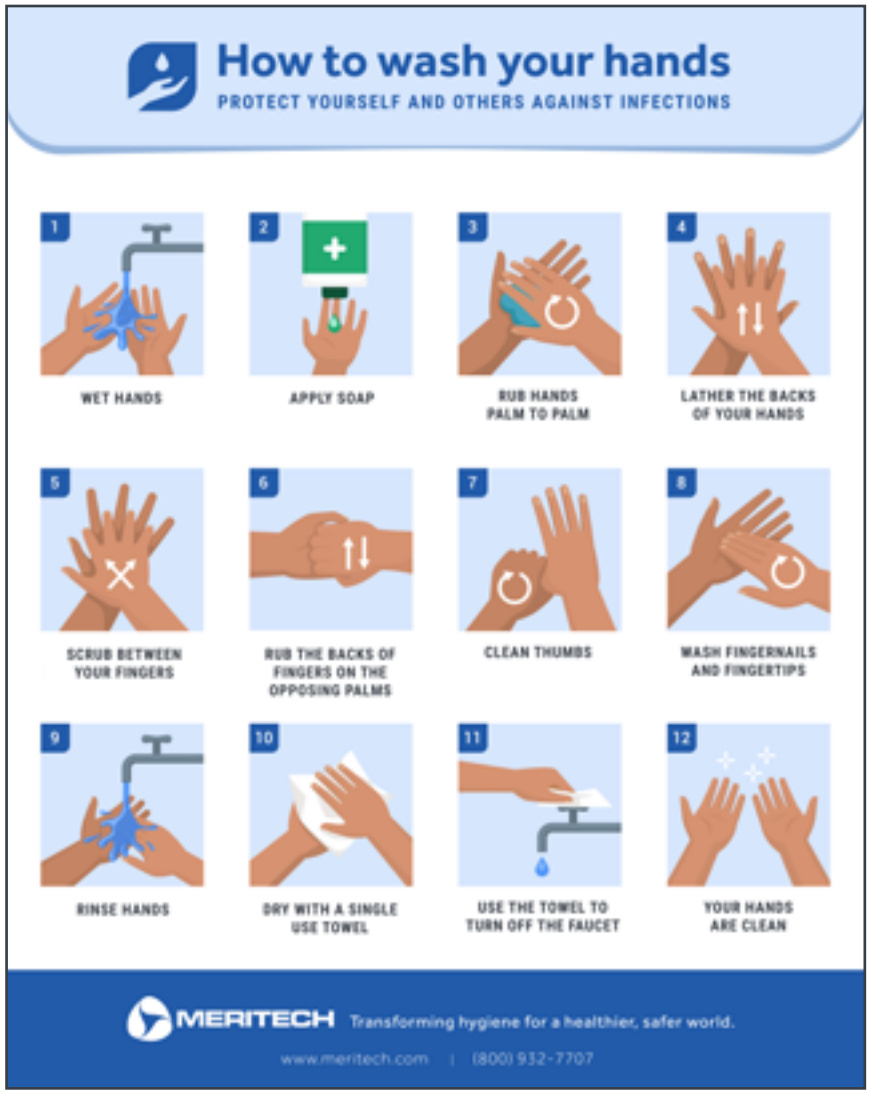
Knee or Foot-Pedal Sinks



Multi-User Fountain or Trough Sinks

Unfortunately, while these systems may be familiar, that does not mean that most people know how to wash their hands correctly in them, or will do it properly every time.

Manual Hand Hygiene



The main drawback of a manual handwashing sink? Human behavior. No matter how stringent your handwashing procedures and SSOPs are, humans are prone to variability and error, resulting in poor hand hygiene and increased risk of pathogen spread.

Whichever type of manual sink is used, its efficacy depends on how thorough each individual is during the handwashing process. The length of time and the steps taken during handwashing are crucial to ensure pathogen removal and food safety.

The recommended steps for manual handwashing include:

1. Wet your hands with clean, running water (warm or cold)
2. Apply soap
3. Lather your hands
4. Scrub your hands for at least 20 seconds. (Need a timer? Hum or sing “Happy Birthday” from beginning to end twice.)
5. Rinse your hands well under clean, running water.
6. Dry your hands using a clean towel or air dry them.

|← Download the manual handwashing steps poster also included in Module 2

Manual Hand Hygiene

With manual handwashing, the level of pathogen removal is highly dependent upon the user. Therefore, relying on traditional sinks requires added time to train and continually re-train team members on the proper handwashing steps to ensure food safety. As discussed in the previous module, with increased workforce diversity, the challenge of training for hygiene is compounded. In the same token, you are also relying on these same individuals to *always* be diligent about avoiding cross contamination touchpoints such as turning off dirty faucets with clean hands.

Did You Know

Temperature does not change the effectiveness of a hand wash. Scientists found that varying water temperature had no effect on pathogen reduction.

See More Handwashing Myths

Semi-Automated Hand Hygiene

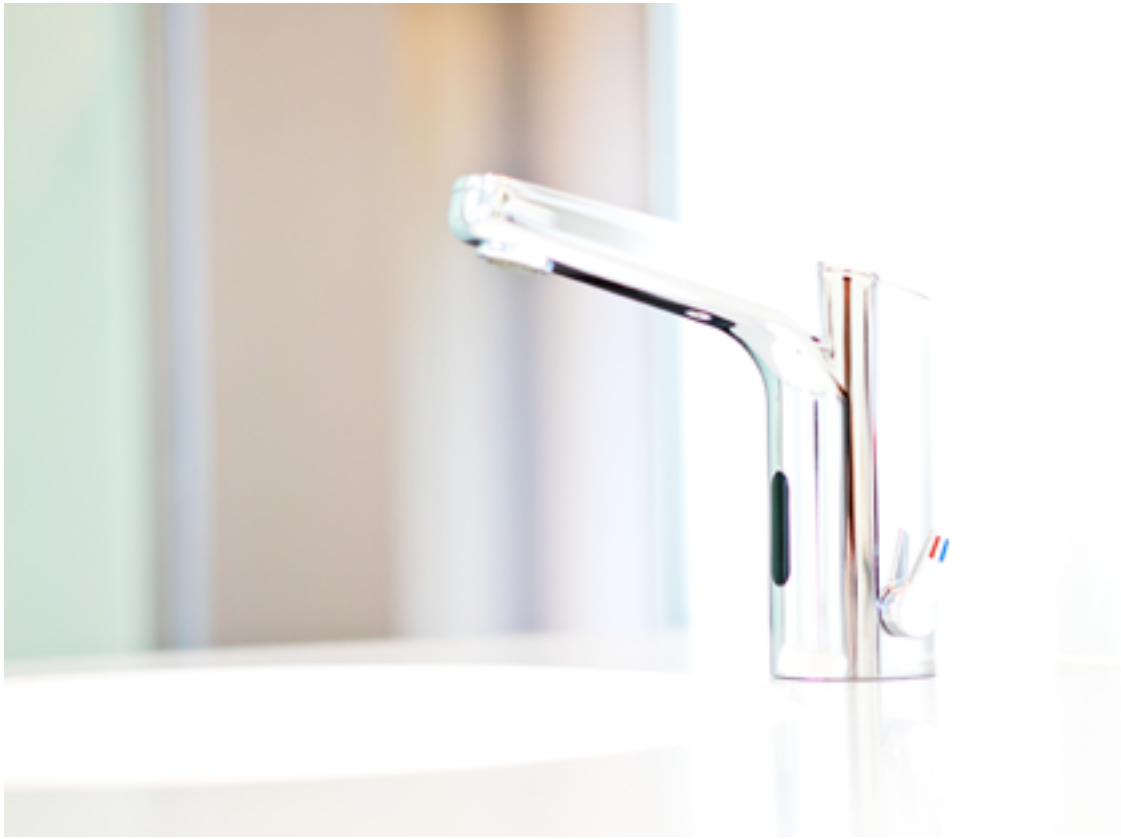
Another well known and commonly-used method is referred to as semi-automated handwashing, in which the water and/or soap is automatically dispensed once a user's hands are detected by a photo-eye sensor.

Benefits:

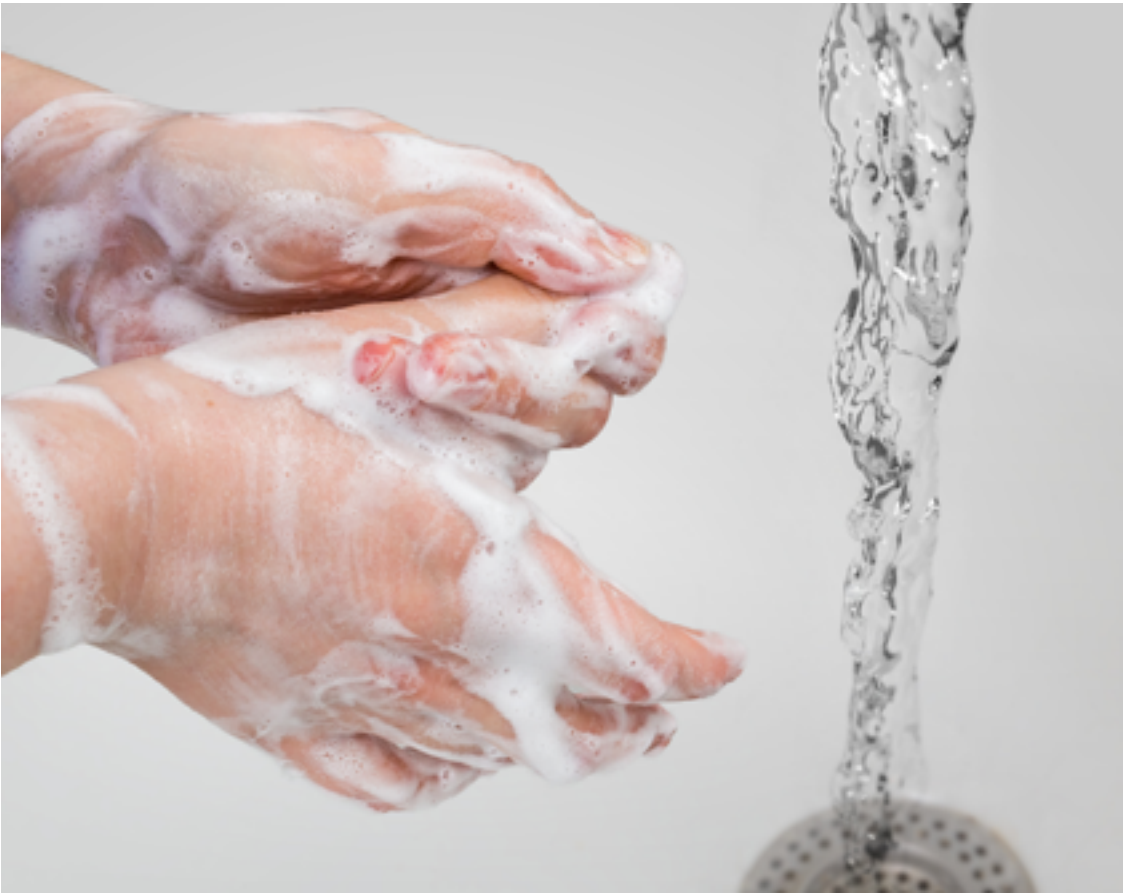
- Low cost
- Familiar system to most
- Fewer touch points reduce cross-contamination risk

Potential Concerns:

- Highly dependent on user
- Unreliable and inconsistent level of pathogen removal
- Increased time for onboarding or retraining on proper handwashing steps
- No compliance tracking
- May be wasteful of water or have low water flow
- No way to ensforce proper handwashing duration
- Can be used as a dump sink
- Inconsistent operation due to photoeye hand detection
- No indication if soap solution is empty



Semi-Automated Hand Hygiene



The main benefit of using a semi-automated handwashing sink is that the touchless activation helps reduce cross-contamination points. Manual faucets often have the very pathogens hand hygiene should eliminate, creating a point where pathogens can be reintroduced to clean hands when water is turned off. Touch-free faucets and even touchless soap dispensers can help prevent the spread of pathogens from one staff member to another.

While semi-automated sinks do reduce the number of contamination points, they still have the same critical pitfall as manual sinks: relying on human behavior. While the water and soap may be dispensed automatically, the handwashing process itself is still manual and relies on the individual to follow proper steps for the correct length of time to ensure effective pathogen removal.

There is also risk of poor hygiene events with semi-automated handwashing stations. Rushed workers may find the “hand dance” of waving a hand in front of a photo-eye sensor to get water or soap too time consuming or frustrating. Therefore, they may forgo the use of soap or skip a crucial step in the handwashing process, resulting in a poor hand hygiene event.

Semi-Automated Hand Hygiene

There is also risk of poor hygiene events with semi-automated handwashing stations. Rushed workers may find the “hand dance” of waving a hand in front of a photo-eye sensor to get water or soap too time consuming or frustrating. Therefore, they may forgo the use of soap or skip a crucial step in the handwashing process, resulting in a poor hand hygiene event.

Another potential pitfall of touchless faucets and soap dispensers lies within the limited or excessive use of water and solutions. The Food Code specifies that water must run for at least 20 seconds in washing facilities used in food processing or handling. While touchless faucets can be set to operate for a particular period of time, such as 20 seconds, to encourage a more thorough wash, this can also lead to considerable waste. Most of the water used may not even come into contact with hands during the washing process.

If not too much water, there could also be the case of low flow or limited water pressure from semi-automated faucets. Some semi-automated faucets do not flow enough water for a long enough period of time to rinse the hands thoroughly. This results in soap and pathogens not being effectively rinsed away and, unlike a manual sink, users cannot increase the water flow of semi-automated sinks to ensure effective pathogen removal.

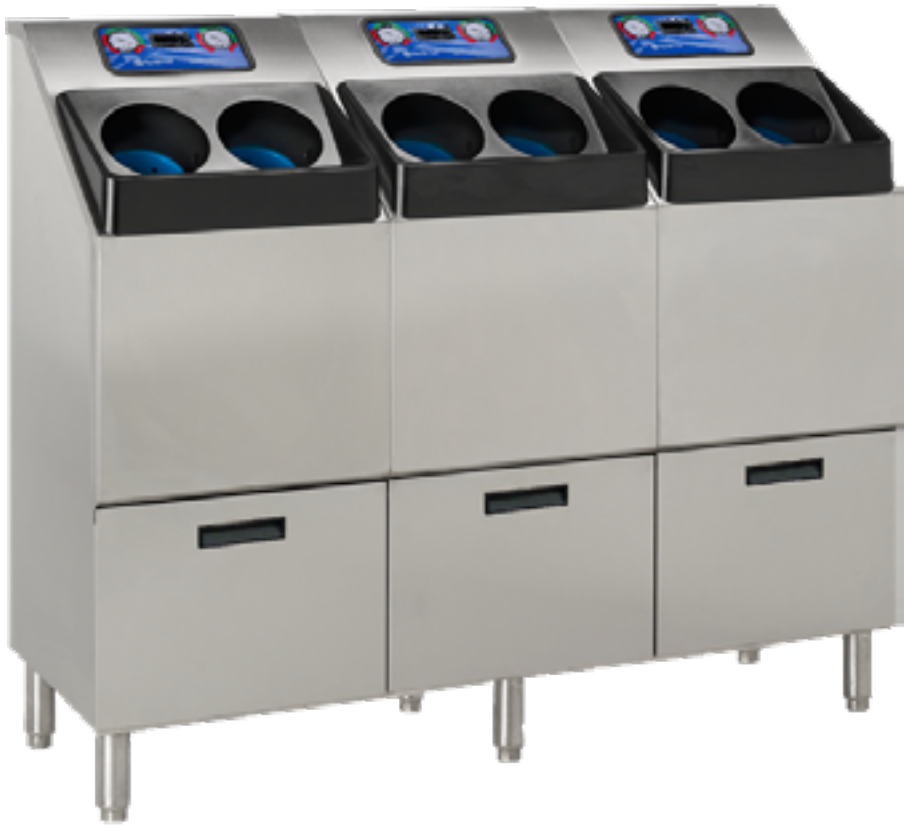
Did You Know

Soap and water does not kill germs. Instead, they work by mechanically removing them from your hands. Running water alone removes some pathogens, but soap allows you to tackle the hard-to-remove germs by acting like a crowbar and prying unwanted pathogens from hands.

Learn More

Automated Hand Hygiene

The previous two handwashing methods rely heavily on production team members to follow proper handwashing steps to ensure the removal of pathogens. Thus, food safety may be compromised by normal human behaviors, as stressed, bored or hurried staff members rush through manual handwashing protocols. Automation removes the variability of human behavior from the equation altogether and quality-controls the handwashing process to ensure consistently effective hand hygiene events.



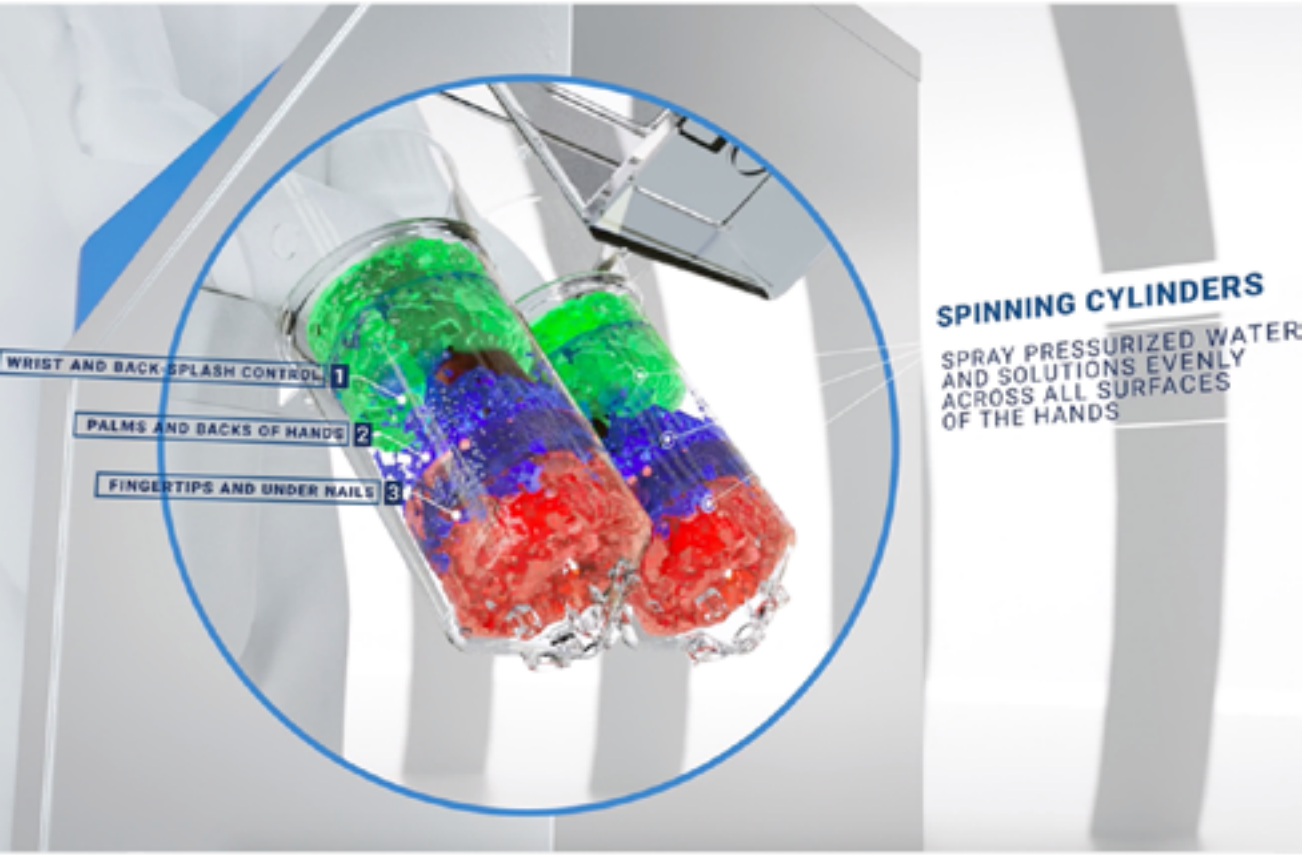
Benefits:

- 12-second wash time for high-throughput
- Easy compliance monitoring
- Automation ensures reliable and consistent results
- Clinically-validated to remove more than 99.9% of pathogens for each and every handwash
- Up to 75% water savings compared to traditional handwashing - only 0.6 gallons per hand wash
- Quick and easy to use for training
- Soap empty indication

Potential Concerns:

- Slightly higher priced than industrial sinks
- New technology can be unfamiliar to some individuals

Automated Hand Hygiene



Automated hand hygiene technology takes the responsibility of performing and timing each step of the handwashing process off the shoulders of employees. Instead, employees simply insert their hands into the station and the photo-eye sensor begins the handwashing event.

Water and solution moves in a cylindrical pattern for 12 seconds to ensure that all parts of the hand, including the backs, palms and fingertips, are evenly cleansed. During this time, 99.9% or greater of pathogens are removed, ensuring all employees have clean hands before entering food production areas.

Watch the videos included in this module to see Meritech automated handwashing stations in action.

Automated Hand Hygiene

Other benefits of automated handwashing stations include the lack of cross-contamination touchpoints and the need to monitor solutions levels. There are no faucets for employees to turn on or off, nor soap dispensers to monitor and refill. Instead, each station has an automatic hand was cycle tracker for simplified compliance monitoring and a solutions empty indicator to proactively alert when hygiene solutions need to be replaced. These stations also feature closed-loop drainage systems to minimize microbial growth and use up to 75% less water than traditional washbasins.

Discover

Not only is it important to select the right hand washing method for your facility, it's important to validate its efficacy for pathogen removal. We'll discuss validation more in later modules, but one of the methods Meritech uses to validate the efficacy of CleanTech® Automated Handwashing Stations is the ASTM standard E1174 or "Glove Juice" method.

Read Validation Studies

Hand Dip Pans / Buckets

While this archaic method of hand sanitation does not meet best practices for hand hygiene and is not recommended for food safety, hand dip pans and buckets remain in use at some facilities.

Benefits:

- Low cost
- Does not require a water source

Potential Concerns:

- Does not remove visible soils or debris
- Soils and debris can build up inside bucket
- Sanitation PPM can deplete over time
- Frequent use can be detrimental to skin health
- Not as effective as soap and water against some pathogens

While this method may seem appealing because it is quick and does not require a water source to rinse off surface soils, it actually presents added risk. Because these are typically static bins, if sanitizing chemicals are not closely monitored and replaced often it is unlikely that the appropriate chemical concentration level (PPM) of sanitizer in these hand dip pans or buckets is effective against pathogens. Irregular maintenance may contribute even further to the transfer and proliferation of pathogens as they remain in the hand dip pan or bucket and be spread from one employee's hands to another. Overall, hand dip stations are not a substitute for handwashing, and it is recommended that if this method is still used, management replace it with a more effective handwashing station.

Instant Hand Sanitizers

A common alternative when water is not available, instant hand sanitizers are used in many facilities. Quick and easy-to-use, this may seem like a great option at first glance, but there are a few significant factors that make handwashing with soap and water superior to alcohol-based sanitizers.

Benefits:

- Low cost
- Does not require water source
- Quick / high throughput
- Easy to use and train new users
- Mobile / portable

Potential Concerns:

- Does not remove soils and debris
- Large volume required to be effective
- Frequent use can be detrimental to skin health
- Emollients can build up overtime leaving hands feeling uncomfortable
- Doesn't remove all pathogens and only kills some pathogens

Instant Hand Sanitizers

One of the obvious pitfalls of sanitizers, especially in food processing facilities, is that they do not remove soils and debris. Instant sanitizers are not a substitute for handwashing and not recommended for use in facilities producing products high in protein, fat or other soils that cannot be easily removed from hands. These soils can substantially interfere with the effectiveness of alcohol gels, as instant sanitizers are intended to kill pathogens on hands that are free of debris.

Essentially, hand sanitizers are intended to kill pathogens with a high concentration of alcohol. This high alcohol concentration can result in dehydrated skin much more quickly than washing hands with soap and water. Chronic overuse of sanitizers can lead to irritation and cracked skin, which actually increases the possibility of infection from pathogens.

These adverse effects on skin health can even discourage proper hand hygiene practices by team members, so if it is necessary to use a hand sanitizer, staff should be provided with moisturizing products to rehydrate the skin in break areas. We recommend educating staff on the 4x4 rule or using lotion on the hands 4 times a day every 4 hours (i.e. 8am, 12pm, 4pm and 8pm).

In Other Words

"Alcohol-based hand sanitizers can quickly reduce the number of microbes on hands in some situations, but sanitizers do not eliminate all types of germs"

- Centers for Disease Control and Prevention (CDC)

SECTION 2

Hand Drying Methods

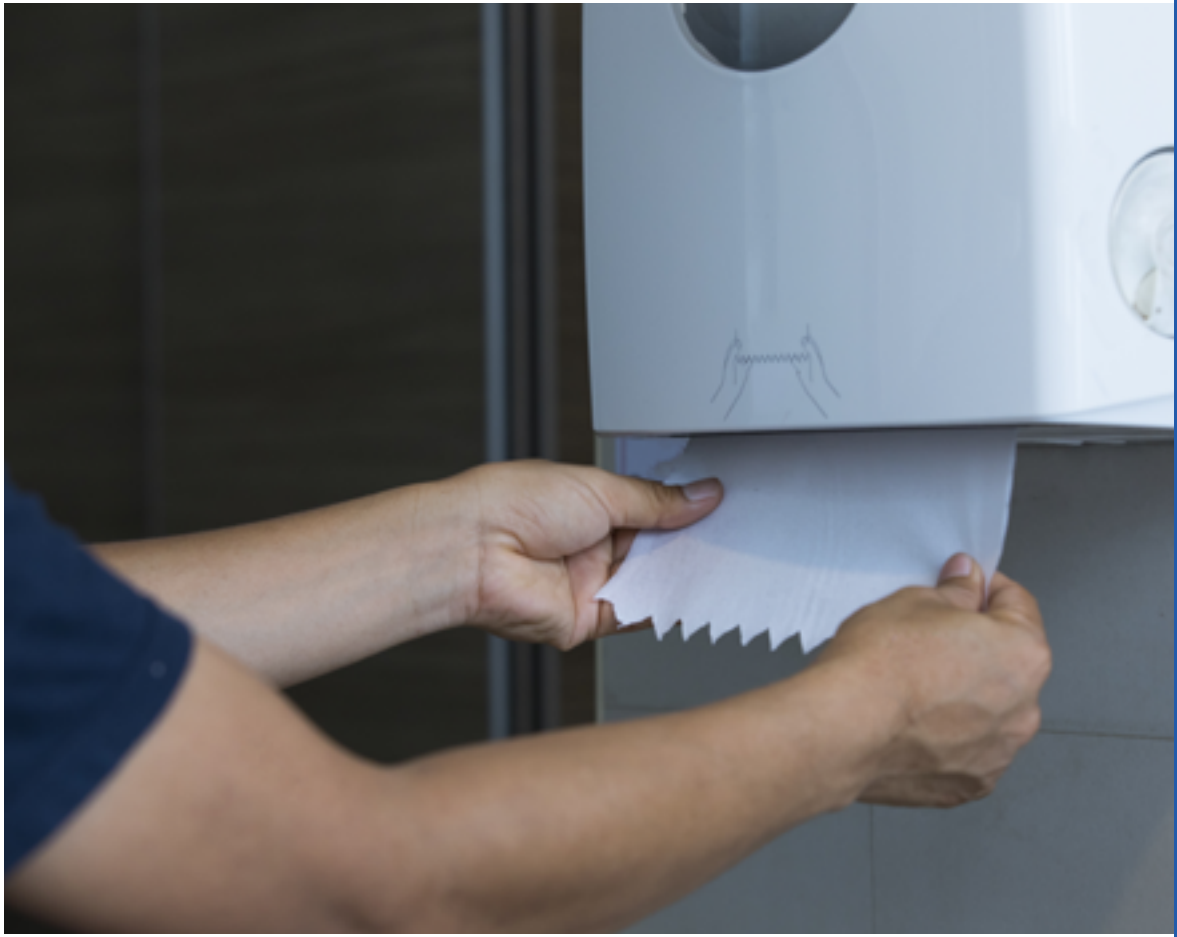
Hand Drying Methods

An effective hand hygiene event doesn't stop at handwashing. The final step of the handwashing process, hand drying, is just as important for skin health and can even help prevent pathogen spread.

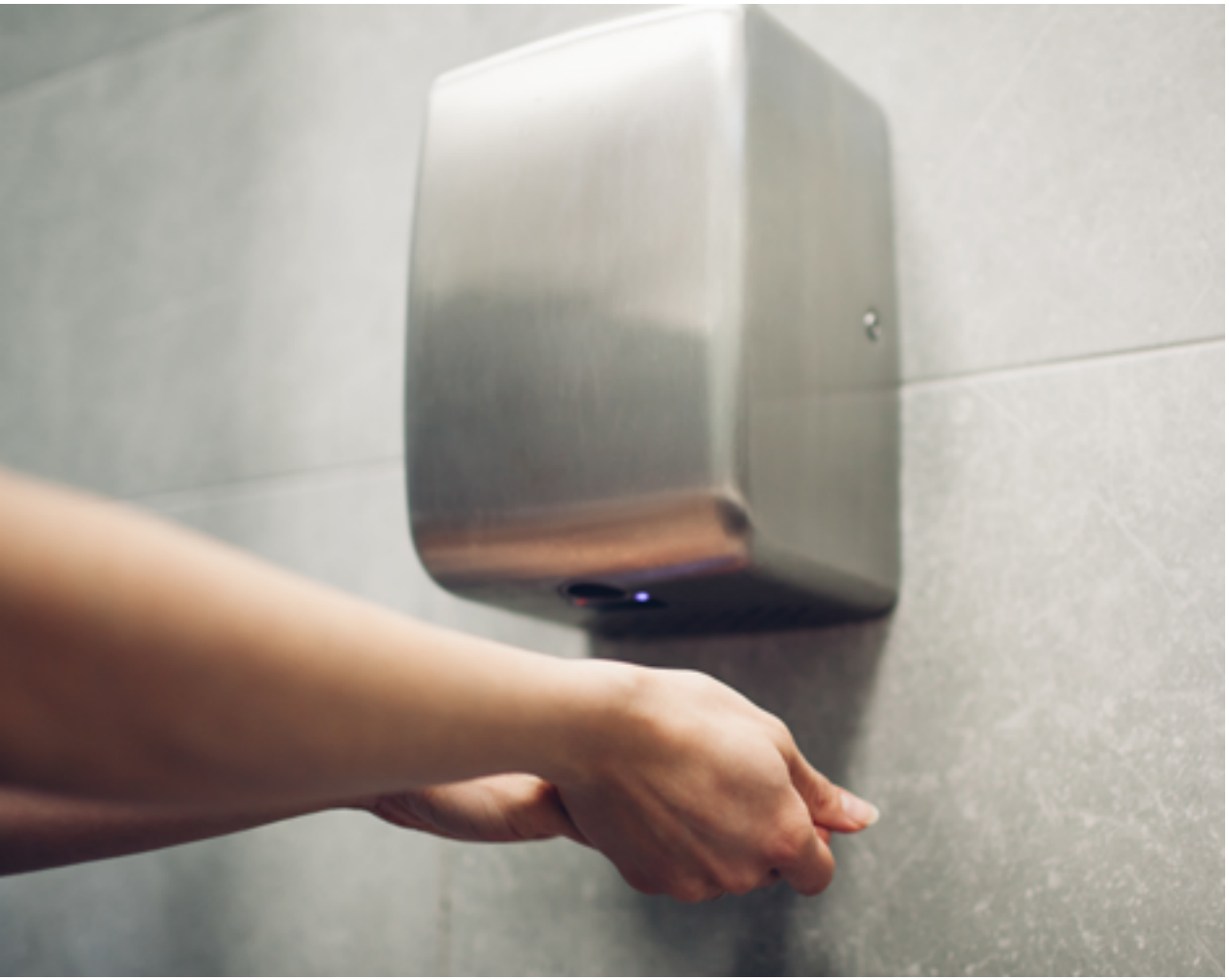
Paper Towels

Many facilities offer paper towels as the final step in a hand hygiene protocol. The quality and cost of these towels can vary widely, but many plants supply their workers with inexpensive brown craft paper towels. While cheap, these products are abrasive and can cause skin irritation.

To avoid skin irritation, employees may opt not to use them at all, leaving hands wet or wiping their hands on clothing or other contamination points. Cheap paper towels, also have limited absorbency and dry unevenly, requiring employees to use more. Because of this, using a "cheaper" paper towel may actually end up costing you much more in the long run.



Hand Drying Methods



Air Dryers

Facilities may choose to avoid the use of paper towels entirely and instead install air dryers. While notorious for being eco-friendly, hand dryers still come with significant environmental cost as they require considerable electricity to use. Not only does this electricity add to operating costs, but these dryers also pose significant food safety risks.

The airflow from dryers circulates air (and pathogens!) from the room which can actually spread pathogens on to workers' clean hands. Buttons or levers used to activate the dryer also serve as contamination touchpoints that can harbor dangerous pathogens.

Air dryers also require significant time to use and do not create a smooth workflow through hygiene zones. Instead of waiting, frustrated or hurried workers may give up on drying completely. Rather, they may dry their hands on clothing which can also cause contamination to clean hands, squander the results of an otherwise well-performed hand wash completely.

SECTION 3

Skin Health

Skin Health

While handwashing is a critical component of hand hygiene, skin health is equally as important and often goes overlooked. Skin is our largest organ and protects the body from the environment and infection. There are both resident and transient pathogens on the skin. Resident pathogens are natural to our skin and are helpful microorganisms that protect us from infection. Transient pathogens like Listeria monocytogenes and E. coli can cause infection and risk to food safety, but can be removed by proper handwashing. Overall, skin is crucial to our health and needs to be protected with good hand hygiene practices.

Skin Health

Soap and Sanitizer Cautions

It may surprise you to know that repeatedly washing your hands without taking measures to maintain skin health can actually increase the risk of infection or contamination. In fact, soaps and sanitizers have been described as the most damaging of all substances routinely applied to skin. Excessive use of sanitizers and solutions can deteriorate skin health, resulting in dried skin with cracks and crevices that serve as ideal breeding grounds for bacteria. While often promoted as a way to combat viruses and infections, hand sanitizers can be even worse for your skin health. Instant hand sanitizers are extremely high in alcohol content that dehydrates hands and kills all pathogens, including the good resident pathogens that protect us.

Moisturizing

Dry hands are a threat to overall skin health as cracks in our hands give pathogens the perfect place to hide and flourish. Therefore, it's critical to protect employee hands from the dehydrating effects of excessive washing and sanitizing. Providing moisturizers in break areas not only will bring comfort to employee hands, but also help replenish skin oils that protect and heal dry, cracked hands.

SECTION 4

Creating a Culture of Hand Hygiene

Creating a Culture of Hand Hygiene

In the previous module we discussed the importance of, and the process for, creating a culture of employee hygiene excellence at your facility. To further develop this culture and promote good hand hygiene practices, it is important to:

Uphold Personal Hand Hygiene Standards

Hand hygiene doesn't begin at the workplace door. Every employee has a responsibility to uphold their own personal hand hygiene standards to ensure food safety and should be prepared before entering the facility. To guarantee maximum pathogen removal during the handwashing processes, employees should ensure:

- Fingernails are trimmed to an acceptable level and free of nail polish that can chip off into food
- Fingers are free of rings and other jewelry that should be left at home or in a locker
- No soils are on the hands or impacted under fingernails. If present, extra steps should be taken to remove these soils during handwashing

Creating a Culture of Hand Hygiene

Did You Know

Gloves are not a substitute for hand hygiene. Tears or punctures can easily cause pathogen spread if hands are not cleaned prior to donning gloves. Gloves can also serve as incubators for pathogens if employees' hands are contaminated when they don them. Food workers should always be provided with hand washing stations and follow proper hand hygiene and drying procedures before donning gloves.

Stay Aware of Contamination Points

There's a lot to remember when it comes to hand hygiene. To maintain your facility's employee hygiene culture, it's key to continually reinforce good PPE behaviors and remind employees to avoid potential contamination touch points including:

- Putting PPE on the right way and following proper donning order in hygiene zones to ensure hands are clean before entering production areas
- The proper way to put on gloves, how to check gloves for damage or deterioration before starting a shift, and when to replace gloves throughout the day
- How adjusting PPE such as hairnets and smocks are a contamination touch point and that a hand hygiene event needs to occur after doing so
- The various surfaces that when touched, need a hand hygiene event afterwards such as buttons, door handles, and handrails
- Human behaviors and unconscious actions to be aware of such as scratching your nose or eyes or even re-tying shoelaces that require a hand hygiene event afterwards

Creating a Culture of Hand Hygiene

Keep Hand Hygiene Part of the Conversation

Training someone only one time on complex hygiene SSOPs designed to ensure food safety is almost as bad as not training them at all. Proper hygiene practices must be constantly reinforced so that team members can memorize the SSOPs, embrace a mindset of hygiene excellence, and take an active role in upholding the hygiene culture at your facility. It is important to regularly make hand hygiene part of the conversation when talking about food safety, especially during:

Hygiene Safety Days

To eliminate food safety risks that may develop from misunderstanding hand hygiene SSOPs, falling out of good hygiene habits or deliberately taking shortcuts, we recommend employing "Safety Days." These are training events that occur at regular intervals throughout the year to remind everyone of hygiene best practices and their importance for food safety. A company can integrate a Safety Day with normal operations, or it can be a training event where team members take a break from their usual tasks and engage in unique educational activities for hygiene awareness.

Huddle Talks

Before each shift, during huddle talks, it is important that production team leaders highlight good hand hygiene behaviors with their teams. Reminding everyone of the basics or calling out good or bad behaviors seen that week helps reinforce handwashing best practices.

Food Safety Committees

A dedicated Food Safety Committee that is open to individuals from all departments and all levels of your organization should be created to support good hand hygiene practices at your facility. This committee should bring attention to any issues in the facility that can affect food safety as well as find new ways to communicate the importance of proper handwashing to team members throughout the year.

Creating a Culture of Hand Hygiene

Ensure Everyone Thinks Like an Owner

In the previous module we discussed putting everyone on a flat line of hygiene leadership and accountability, to ensure that everyone is "Thinking Like an Owner" when it comes to hygiene. For hand hygiene this means:

Always Performing Proper Handwashing Steps

When team members signed the hygiene social contract, they agreed to think like an owner when it comes to food safety. This includes washing hands the right way, for the proper length of time to ensure pathogen removal and food safety, even when no one is watching.

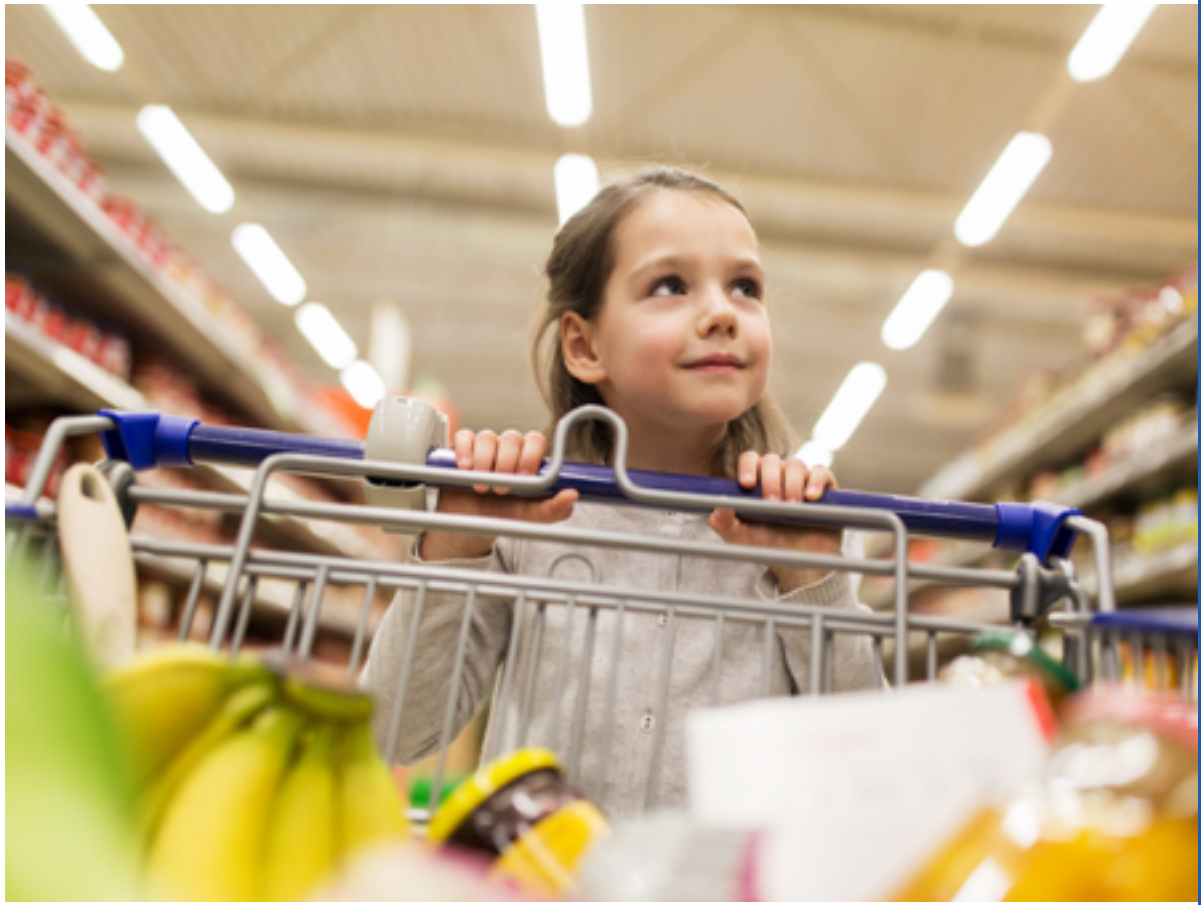
Maintaining Hand Hygiene Stations

Hand hygiene stations, particularly sinks, can pose significant food safety risks if they are not regularly cleaned and maintained. Sinks can actually spread infection and should be disinfected regularly, especially touchpoints like faucet handles. Soap dispensers should also be disinfected regularly and cleared of residues as these provide a medium for bacterial growth.

While production team members may not be directly in charge of the cleaning and maintenance of handwashing stations, it's important that they stay aware of station conditions. Hand hygiene stations should always contain adequate supplies, including soap and paper towels to meet shift demands. If the station is dirty, in need of supplies or the water pressure is too low to perform a proper hand hygiene event, team members should quickly advise management to fix the situation in order to ensure food safety.

Conclusion

Overall, effective hand hygiene is at the core of hygiene best practices for food safety, and employees are on the front lines in the fight against contamination from pathogens. Hand hygiene is the one variable that is dependent upon each member of your team, so it's important that each person has pride in contributing to the overall safety and health of your consumers through proper hand hygiene. It is also important to take steps to implement this culture among your team and design your facility with handwashing stations that reduce the spread of pathogens. Learn more about each of the handwashing methods and get useful hand hygiene tools and guides to share with your team in this module of the Employee Hygiene Toolbox.



MERITECH

Your Partner in Hygiene Excellence

info@meritech.com

www.meritech.com

(800) 932-7707