

EMPLOYEE TRAINING RECORD

TRAINING TITLE Bacterial Pathogens Found in Wastewater

KEY TEACHING POINTS

Unlike viruses, bacteria do not require a living host cell to reproduce. Pathogenic bacteria are microscopic in size and are extremely common in wastewater. Because bacteria can reproduce outside the body, microorganisms can be present in large quantities in the collection system. Bacterial infections, therefore, will result from their proliferation in an aqueous environment.

Because of their daily exposure to wastewater-contaminated environments, wastewater workers have a higher incidence of potential exposure to pathogens than the general public. For most workers, however, the risk of developing a disease is relatively low. Proper personal hygiene is critical, however, because infections may occur without symptoms, and antibodies to bacteria and viruses may develop without illness symptoms (latent infection) being readily apparent. The table below indicates the most common bacterial pathogens found in wastewater.

Microorganism	Disease	Mode of Transmission Comments
Salmonella	Salmonellosis (gastroenteritis)	Ingestion. Infection is unlikely without direct ingestion of waste. Reduce risk by proper hygienic practices.
	Typhoid fever	
	Paratyphoid fever	
Shigella	Shigellosis (gastroenteritis)	Ingestion. Survives for only a short time in the sewer system. Generally a greater risk to collection system workers than treatment plant operators
	Bacillary dysentery	
Clostridium	Tetanus	Infected puncture wound.
Vibrio	Asiatic cholera	Ingestion.
Leptospira	Weil's disease	Contact with mucous membranes or skin abrasions.
Campylobacter	Acute bacterial enteritis	Ingestion.
Yersinia	Acute gastroenteritis	Ingestion.

REMEMBER - PERSONAL HYGIENE IS YOUR BEST PROTECTOR AGAINST DISEASE

TEST

QUESTION	ANSWERS	
	TRUE	FALSE
1 Bacteria require a living host cell to reproduce.		
2 Bacteria is extremely common in wastewater.		
3 Wastewater workers have a higher potential of exposure than the general public.		
4 The risk of developing disease is relatively low.		
5 Personal hygiene is the best protector against disease.		
EMPLOYEE'S NAME	EMPLOYEE'S SIGNATURE	DATE
INSTRUCTOR'S NAME	INSTRUCTOR'S SIGNATURE	DATE

1. False 2. True 3. True 4. True 5. True