

DIRECT FROM CDC ENVIRONMENTAL HEALTH SERVICES

# 2021 Model Aquatic Health Code (4th Edition)

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**ENVIRONMENTAL :** The National Environmental Health Association (NEHA) strives to provide up-to-date and relevant information on environmental health and to build partnerships in the profession. In pursuit of these goals, NEHA features this column on environmental health services from the Centers for Disease Control and Prevention (CDC) in every issue of the *Journal*.

In these columns, authors from CDC's Water, Food, and Environmental Health Services Branch, as well as guest authors, will share insights and information about environmental health programs, trends, issues, and resources. The conclusions in these columns are those of the author(s) and do not necessarily represent the official position of CDC.

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**T**he 2021 Model Aquatic Health Code (MAHC) is the fourth edition of the code, which was first published in 1998. The MAHC is a set of minimum health and safety standards for public swimming facilities, including pools, spas, and water parks. The code is designed to protect the health and safety of swimmers and to ensure that public swimming facilities are clean, safe, and enjoyable. The MAHC is based on the latest scientific research and best practices in the field of aquatic health. The code is organized into chapters that cover various aspects of aquatic health, including water quality, pool and spa maintenance, safety, and emergency preparedness. The MAHC is a living document that will be updated as new information becomes available.

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**Cyanuric Acid**

Cyanuric acid is a chemical compound that is commonly used in swimming pools to stabilize chlorine. It is a white, crystalline solid that is soluble in water. Cyanuric acid is used to protect chlorine from being broken down by sunlight, which would otherwise reduce the effectiveness of the chlorine. Cyanuric acid is also used to protect chlorine from being broken down by other chemicals in the pool, such as sweat and urine. Cyanuric acid is a weak acid that has a pH of approximately 7.5. It is not toxic to humans at the concentrations used in swimming pools. However, it can be irritating to the eyes and skin. Cyanuric acid is also a potential allergen. Cyanuric acid is a common component of many swimming pool sanitizers. The concentration of cyanuric acid in a swimming pool should be maintained between 30 and 100 ppm. Higher concentrations can lead to a condition known as "chlorine lock," which can prevent chlorine from effectively sanitizing the pool. Cyanuric acid is also a potential environmental pollutant. It can be found in surface water and groundwater near swimming pools. Cyanuric acid is a persistent organic pollutant that can accumulate in the environment. Cyanuric acid is a potential endocrine disruptor. It has been shown to affect the reproductive system of some aquatic organisms. Cyanuric acid is a potential carcinogen. It has been classified as a possible carcinogen by the International Agency for Research on Cancer (IARC). Cyanuric acid is a potential neurotoxin. It has been shown to affect the nervous system of some aquatic organisms. Cyanuric acid is a potential immunosuppressant. It has been shown to reduce the immune response of some aquatic organisms. Cyanuric acid is a potential irritant. It can cause irritation of the eyes, nose, and throat. Cyanuric acid is a potential skin irritant. It can cause skin irritation in some people. Cyanuric acid is a potential respiratory irritant. It can cause respiratory irritation in some people. Cyanuric acid is a potential eye irritant. It can cause eye irritation in some people. Cyanuric acid is a potential mucous membrane irritant. It can cause irritation of the mucous membranes in some people. Cyanuric acid is a potential allergen. It can cause allergic reactions in some people. Cyanuric acid is a potential carcinogen. It has been classified as a possible carcinogen by the International Agency for Research on Cancer (IARC). Cyanuric acid is a potential neurotoxin. It has been shown to affect the nervous system of some aquatic organisms. Cyanuric acid is a potential immunosuppressant. It has been shown to reduce the immune response of some aquatic organisms. Cyanuric acid is a potential irritant. It can cause irritation of the eyes, nose, and throat. Cyanuric acid is a potential skin irritant. It can cause skin irritation in some people. Cyanuric acid is a potential respiratory irritant. It can cause respiratory irritation in some people. Cyanuric acid is a potential eye irritant. It can cause eye irritation in some people. Cyanuric acid is a potential mucous membrane irritant. It can cause irritation of the mucous membranes in some people. Cyanuric acid is a potential allergen. It can cause allergic reactions in some people.

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**Giardia**

Giardia is a parasitic protozoan that causes the disease giardiasis. It is a common cause of waterborne illness. Giardia is found in the feces of infected humans and animals. It is highly resistant to chlorine and other disinfectants. Giardia is a common contaminant of surface water and groundwater. Giardia is a potential cause of chronic illness. It has been associated with irritable bowel syndrome, Crohn's disease, and other chronic conditions. Giardia is a potential cause of malabsorption. It can interfere with the absorption of nutrients in the small intestine. Giardia is a potential cause of weight loss. It can lead to weight loss due to malabsorption. Giardia is a potential cause of fatigue. It can lead to fatigue due to malabsorption. Giardia is a potential cause of abdominal pain. It can cause abdominal pain and cramping. Giardia is a potential cause of diarrhea. It can cause diarrhea and loose stools. Giardia is a potential cause of nausea and vomiting. It can cause nausea and vomiting. Giardia is a potential cause of loss of appetite. It can lead to a loss of appetite. Giardia is a potential cause of dehydration. It can lead to dehydration due to diarrhea and vomiting. Giardia is a potential cause of electrolyte imbalance. It can lead to electrolyte imbalance due to diarrhea and vomiting. Giardia is a potential cause of malnutrition. It can lead to malnutrition due to malabsorption. Giardia is a potential cause of growth retardation. It can lead to growth retardation in children. Giardia is a potential cause of cognitive impairment. It has been associated with cognitive impairment in children. Giardia is a potential cause of mental health problems. It has been associated with mental health problems in children. Giardia is a potential cause of reproductive problems. It has been associated with reproductive problems in women. Giardia is a potential cause of infertility. It has been associated with infertility in women. Giardia is a potential cause of miscarriage. It has been associated with miscarriage in women. Giardia is a potential cause of stillbirth. It has been associated with stillbirth in women. Giardia is a potential cause of neonatal death. It has been associated with neonatal death in infants. Giardia is a potential cause of death. It has been associated with death in children and adults. Giardia is a potential cause of disability. It has been associated with disability in children and adults. Giardia is a potential cause of chronic illness. It has been associated with chronic illness in children and adults. Giardia is a potential cause of malabsorption. It can interfere with the absorption of nutrients in the small intestine. Giardia is a potential cause of weight loss. It can lead to weight loss due to malabsorption. Giardia is a potential cause of fatigue. It can lead to fatigue due to malabsorption. Giardia is a potential cause of abdominal pain. It can cause abdominal pain and cramping. Giardia is a potential cause of diarrhea. It can cause diarrhea and loose stools. Giardia is a potential cause of nausea and vomiting. It can cause nausea and vomiting. Giardia is a potential cause of loss of appetite. It can lead to a loss of appetite. Giardia is a potential cause of dehydration. It can lead to dehydration due to diarrhea and vomiting. Giardia is a potential cause of electrolyte imbalance. It can lead to electrolyte imbalance due to diarrhea and vomiting. Giardia is a potential cause of malnutrition. It can lead to malnutrition due to malabsorption. Giardia is a potential cause of growth retardation. It can lead to growth retardation in children. Giardia is a potential cause of cognitive impairment. It has been associated with cognitive impairment in children. Giardia is a potential cause of mental health problems. It has been associated with mental health problems in children. Giardia is a potential cause of reproductive problems. It has been associated with reproductive problems in women. Giardia is a potential cause of infertility. It has been associated with infertility in women. Giardia is a potential cause of miscarriage. It has been associated with miscarriage in women. Giardia is a potential cause of stillbirth. It has been associated with stillbirth in women. Giardia is a potential cause of neonatal death. It has been associated with neonatal death in infants. Giardia is a potential cause of death. It has been associated with death in children and adults. Giardia is a potential cause of disability. It has been associated with disability in children and adults. Giardia is a potential cause of chronic illness. It has been associated with chronic illness in children and adults.

# Did You Know?

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