

EMCP 505: Environmental Emergencies

Environmental Emergencies objectives: This course proposes to teach the learner how to diagnose and treat patients one may encounter in the Emergency Department with various disorders from environmental exposures.

At the end of the course the learner will integrate material covered in online lectures, reading assignments, and vignettes and apply this knowledge to clinical problem solving. Specifically, the learner should be able to:

1. Describe the pathophysiology, diagnosis, and treatment of chilblains, frostbite, frostnip and trench foot.
2. Explain the physiologic changes and possible complications of hypothermia.
3. Describe an appropriate approach to rewarming the hypothermic patient.
4. Explain the relationship between hypothermia and cardiac dysrhythmias and cardiac arrest.
5. Compare and contrast heat exhaustion and heat stroke.
6. Describe the body's response to heat stress.
7. Compare and contrast the clinical presentation, diagnostic evaluation and treatment of prickly heat, heat cramps, heat tetany, and heat syncope.
8. Describe the clinical presentation, diagnostic evaluation, and treatment of a patient with heat stroke.
9. List preventive measures for heat-related illnesses.
10. Describe the distinguishing features of a crotalid (pit viper) snake and an elapid snake.
11. Describe the clinical features and treatment of crotaline and elapid, and cobra snakebites.
12. Describe the clinical features and treatment of a gila monster bite.
13. Explain the clinical features, diagnostic evaluation, and treatment of bites from the following marine animals: sharks, barracudas, and moray eels.
14. Describe the treatment of coral-induced injuries.
15. Explain antibiotic therapy for an injury occurring in the marine environment.
16. Explain the appropriate treatment of the various types of jellyfish, octopus, starfish, sea urchin, and sponge envenomations.
17. Describe the clinical features and treatment of a stingray envenomation.
18. Describe the treatment of a sting from the following venomous fish: stone fish, scorpion fish, and lion fish.
19. Describe the clinical features and ED treatment of local and systemic reactions to bee stings.
20. Describe the characteristics and treatment of fire ant bites.
21. Describe the characteristics and treatment of a bite from a *Loxosceles* spider
22. Describe the pathophysiology and treatment of a black widow spider bite, a tarantula bite, and a chigger bite.
23. Describe the pathophysiology of barotrauma of ascent and barotrauma of descent during deep-sea diving.

24. Explain the symptoms and treatment of decompression sickness types I and II.
25. Explain the presentation and treatment of arterial gas embolism.
26. Describe nitrogen narcosis.
27. Compare and contrast “dry drowning” with “wet drowning”.
28. Explain the prehospital and ED care of a near drowning patient.
29. Describe the pathophysiology of the fluid and electrolyte abnormalities that can be seen in the burn patient. Explain the method of fluid resuscitation in these patients.
30. Describe how to estimate burn size and depth.
31. List the criteria for transfer of a burn patient to a burn unit.
32. Describe inhalational injuries and their treatment.
33. Describe the ED care of a burn victim.
34. Explain the indications for an escharotomy in the burn patient.
35. Describe the prehospital care and ED treatment of a victim of electrical or lightning injury.
36. Explain how an electrical injury or lightning injury may impact the following body systems: cardiac, CNS, spinal cord, PNS, skin, eyes, ears, mouth, GI, muscles, and vascular.
37. Explain the treatment of electrical injury in the pregnant patient.
38. Explain the disposition of the patient with an electrical injury or lightning.
39. Explain the physiologic changes that occur as a person ascends to a high elevation. Describe the process of acclimatization.
40. Describe the clinical features, pathophysiology, and treatment of acute mountain sickness.
41. Describe high-altitude cerebral edema and cerebrovascular syndromes of altitude.
42. Describe high-altitude pulmonary edema and its treatment.
43. List some chronic illnesses that may be exacerbated at high altitudes.