United States Lifesaving Association
Position Statement
Shark Bite Prevention and Response

Approved by the USLA Board of Directors: May 5, 2002

INTRODUCTION

Sharks are native to the ocean, just as bears are native to the forest. They are ever-present, though rarely observed by swimmers. Far more rare than a shark sighting, is a report of a shark bite. In fact, shark bites are probably the single most unusual event threatening the safety of those involved in aquatic recreation.

Statistics compiled for the year 2000 by the United States Lifesaving Association, based on reports from 68 ocean lifeguard agencies for areas within their jurisdiction, include estimated attendance of 264,156,728 persons, provision of medical care to 236,642 persons, 70,771 lifeguard rescues from drowning, 12 drownings in areas under the immediate protection of lifeguards, 62 drownings in areas outside the protection of lifeguards, and 58 fatalities due to causes other than drowning. For the same year, at these same beach areas, the International Shark Attack File, a compilation of all known shark attacks that is administered by the American Elasmobranch Society and the Florida Museum of Natural History, recorded a total of 23 unprovoked shark bites, none of which resulted in death. For all US coastal waters in the year 2000, the International Shark Attack File reported 54 unprovoked shark bites, with one resulting in death.

These statistics make it evident that the danger of injury or death from a shark bite is far less than from drowning, near-drowning, or other beach related injuries. In fact, from 1959 – 1990, in Florida there were 313 fatalities attributed to lightning and only four attributed to sharks. Thus, in Florida the relatively death toll from lightning strikes as compared to shark bites is 78:1. Nevertheless, many people harbor a disproportionate fear of being bitten by a shark, which can sometimes rise to virtual hysteria.

Due to the level of concern surrounding shark bites, the United States Lifesaving Association has been asked by its members to promulgate recommended guidelines for shark bite prevention and for response to shark bite incidents.

BACKGROUND

It is generally believed by experts that most shark bites result from *prey identification mistakes*. That is, a shark hunting its normal prey, whether fish, seal, or other food source, mistakes a human for that prey. In other cases, sharks chasing schools of fish in murky water may simply bite a human inadvertently. In the vast majority of cases, the shark bites only once, then leaves the human alone. Presumably, the shark quickly determines that the human who has been bitten is not the prey the shark was seeking and it departs.

As rare as single shark bite incidents are, a true shark attack is even more rare. For purposes of definition, we consider a *shark attack* to be an event in which the shark repeatedly bites a human or pursues a human after an initial bite. Nevertheless, there are documented cases of sharks, apparently unprovoked, repeatedly biting humans. It is unknown what may cause a shark to exhibit this behavior. Most such incidents involve ship sinkings, as was the case during World War II with the USS Indianapolis. Nevertheless, the presence of a shark or sharks which have bitten a human do present a potentially heightened hazard to persons in the water. The shark's behavior, even if inadvertent, may be repeated, or blood may attract further shark activity.

Different types of sharks in different waters may seek different types of prey, which can produce different outcomes. For example, seals are a primary food source for great white sharks off the coast of California. These sharks have been observed to kill their prey through a primary, violent bite, which results in the seal bleeding to death, after which the shark returns to eat the seal. Conversely, sharks in the Florida area are typically hunting fish, which they may consume in part or in whole in a single bite. These different circumstances may help explain why shark bites off the coast of California, while much less frequent, are more likely to result in death than are shark bites off the coast of Florida, which typically result in puncture wounds or lacerations.

The United States Lifesaving Association is unaware of any proven techniques whereby an unprotected swimming rescuer can successfully or safely intervene when a shark bites another swimmer. However, rescuers are rarely victims of shark attacks. In fact, of the 438 unprovoked shark bite incidents investigated by the International Shark Attack File that involved attempted rescue by another person, only 14 (3.2%) resulted in the rescuer being injured. Of those 14, only two (0.5%) involved injury to a beach-based rescuer who responded to assist. One of these two cases was fatal. Since most shark bites occur quickly and can cause serious, sometimes life-threatening lacerations, there is great value in the availability of trained personnel to rescue the injured swimmer, provide emergency medical care, and arrange rapid transport, after a shark bite has occurred.

RECOMMENDATIONS

Prevention

1. Lifeguards and lifeguard agencies should consult *The United States Lifesaving Association Manual of Open Water Lifesaving* and the International Shark Attack website (http://www.flmnh.ufl.edu/fish/Sharks/ISAF/ISAF.htm) for information on preventive actions that can be taken to reduce the chance of shark bites and should be prepared to inform the public of these measures.
2. Lifeguards should be trained to recognize sharks common to their area of responsibility and shark behavior that may be considered threatening.
3. When behavior of a shark or sharks appears to present an unusual hazard to swimmers, an evaluation should be made as to whether it is appropriate to warn persons involved in aquatic activity or to advise them to leave the water. In areas where shark bites are known to occur with greater frequency than normal, posted signs may be appropriate.
4. If a shark bite occurs, persons in the water in the area should be advised and encouraged to leave the water until such time that the immediate threat appears to have abated. Since

shark behavior is unpredictable, this may involve a fixed period of time or observed criteria, such as the absence of schooling fish that may have attracted shark activity. Local ordinances may require that the water be closed.

5. In the case of a shark attack, wherein the shark repeatedly bites or pursues a human, the water in the immediate area should be cleared of all swimmers and kept clear until it can be determined that the immediate threat is over. Lifeguards in adjacent areas should be notified of the attack and advised to maintain heightened vigilance.

Response

6. The best protective equipment for a lifeguard attempting a rescue of a shark bite victim is an enclosed rescue boat with high gunwales. A personal watercraft may be an alternative, but most personal watercraft provide less protection to the lifeguard and may not be adequate to safely evacuate a seriously injured victim. While a rescue board or kayak may elevate the lifeguard from the water, some sharks have bitten surfers and kayakers, apparently after mistaking them for seals or sea lions. In areas where shark bites have occurred with higher than normal frequency, lifeguards should consider stationing a rescue boat in the vicinity that can allow a rapid, safe response to such incidents.
7. If a lifeguard observes a shark bite in progress, the lifeguard should immediately notify other lifeguards and determine the most appropriate course of action. This should follow the agency's overall emergency response plans and any specific plans that may exist for shark bites.
8. The United States Lifesaving Association cannot issue a blanket recommendation that that a lifeguard without protective equipment attempt to intervene during a shark bite incident, due to the potential danger. International Shark Attack File statistics however, suggest that danger to the lifeguard in an attempt to intervene is extremely limited. Moreover, in the vast majority of cases, the shark will effect a bite, then leave the victim alone, well before the lifeguard could possibly intervene. Once injury has been inflicted to the victim, heavy bleeding is likely, so rescue from the water and immediate medical aid may be essential to victim survival.
9. If a rescue boat is not available and if, as is most typically the case, the shark bite appears to be a typical single hit and run incident, and if the lifeguard considers it safe and within agency guidelines to enter the water, the lifeguard should perform a rescue and treat the wounds of the victim.
10. Once the victim has been evacuated to shore or to a rescue boat, appropriate emergency medical assistance should be provided, in accordance with the lifeguard's training. In addition to normal emergency medical priorities, particular attention should be paid to stopping bleeding and treating for shock.
11. In beach areas where shark bites have historically occurred with a frequency that is significantly higher than normal, specific policies appropriate to local conditions are recommended. These policies should be based, in part, on consultation with shark experts and local emergency medical authorities.

REFERENCES

The United States Lifesaving Association Manual of Open Water Lifesaving
The International Shark Attack File: http://www.flmnh.ufl.edu/fish/Sharks/ISAF/ISAF.htm

CONTRIBUTORS

Primary Author: B. Chris Brewster, Chair, USLA National Certification Committee
George Burgess – International Shark Attack File
Tim Gallagher – Avon-by-the-Sea, New Jersey
Rick Gould – USLA National Statistics Coordinator
Mike Hensler – Volusia County (Florida) Beach Patrol, Florida
Peter Wernicki, M.D. – USLA Medical Advisor