

Results of Sea Turtle Acupuncture Resuscitation Pilot Trial and the Tortuga Revival Device

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Sea Turtle caught in artisanal stingray /shark net in San Felipe Mexico

Is it possible to revive stranded dead-appearing sea turtles, turtles in coma from head injuries, or ones that have recently drowned? The

answer is yes. The question is when to attempt to revive them. If they are stranded, there is probably some underlying pathology that you should be prepared to treat after you revive them. At Australian Seabird Rescue, their results were four revived out of 13 attempts, and one survived long term. However these were turtles otherwise declared dead. At South Carolina Aquarium, acupuncture and epi and doxapram were used to temporarily revive a few loggerheads that were declared dead.

At Xcaret, Mexico, two loggerheads have been revived long term after head injuries. The first was on an IV over three months, not eating or diving, just floating. She began moving during the first treatment and within a week began eating. Over a few weeks she was diving and acting like a normal turtle. The second loggerhead responded to acupuncture beginning with slow reactions and made good progress.



At LeReunion, France, two loggerheads were resuscitated successfully and released after being submerged, caught by hook. Pilot results thus far have had a 25 percent revival rate (short term) for beached dead turtles, a 100 percent revival rate for coma from concussion, and a 100 percent revival rate after coma from forced submergence. The positive results of the small trial (16 turtles) suggests the need for a larger full-scale controlled trial.

Shrimp trawling is one of the greatest causes of sea turtle mortality throughout the world. The S.T.A.R. protocol was originally designed by Phil Rogers M.S.R.V.C. and I to revive turtles in shock/coma for only a few hours due to being submerged by trawler nets or longline fishermen. Acupuncture at 1-3 specific points has been used by clinicians to successfully revive comatose humans, horses, dogs, cats and other species.

National Marine Fisheries Service compiled the results of seven research projects spanning 12 years during which 4,397 turtles were caught in trawler nets. For most tow times, there were more comatose than dead turtles. A turtle returned to the sea in coma is presumed to die.

Given the feedback regarding training laymen to use needles to resuscitate sea turtles aboard trawlers, a dime sized solar powered 10 Hz microamp generator has been developed by me and Joe

Randolph of Randolph Telecom. It is working in human trials and rapidly having the desired physiologic effect when used at acupuncture points.

This device would be placed just below the turtles nostrils at the philtrium, the main sea turtle emergency point. It's as easy as putting on a bandaid.

Acupuncture Protocol for Sea Turtle Resuscitation

If the turtle appears to be in shock, coma, respiratory and/or cardiac arrest, appears drowned or has been pronounced clinically dead, use this procedure.

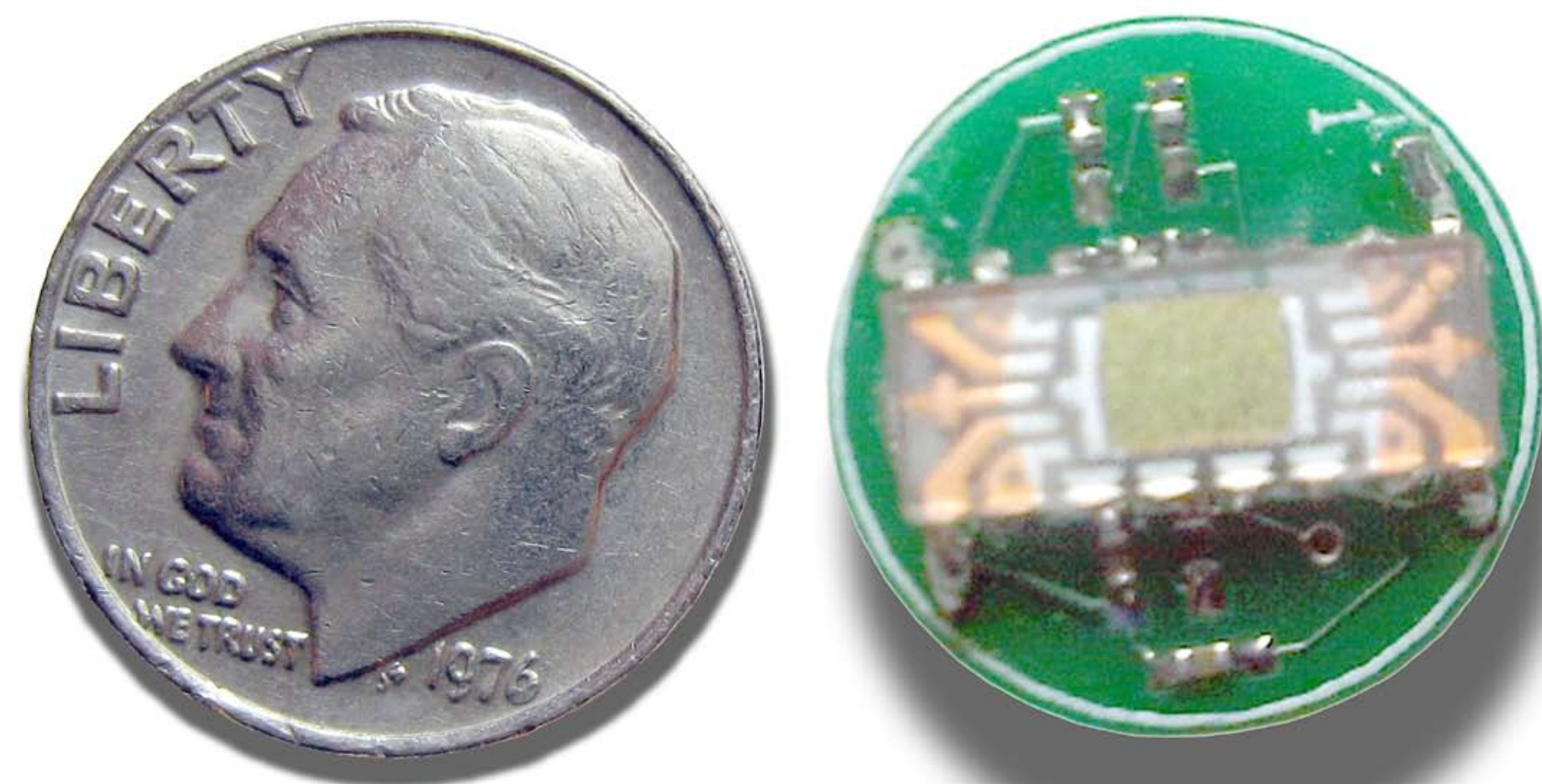
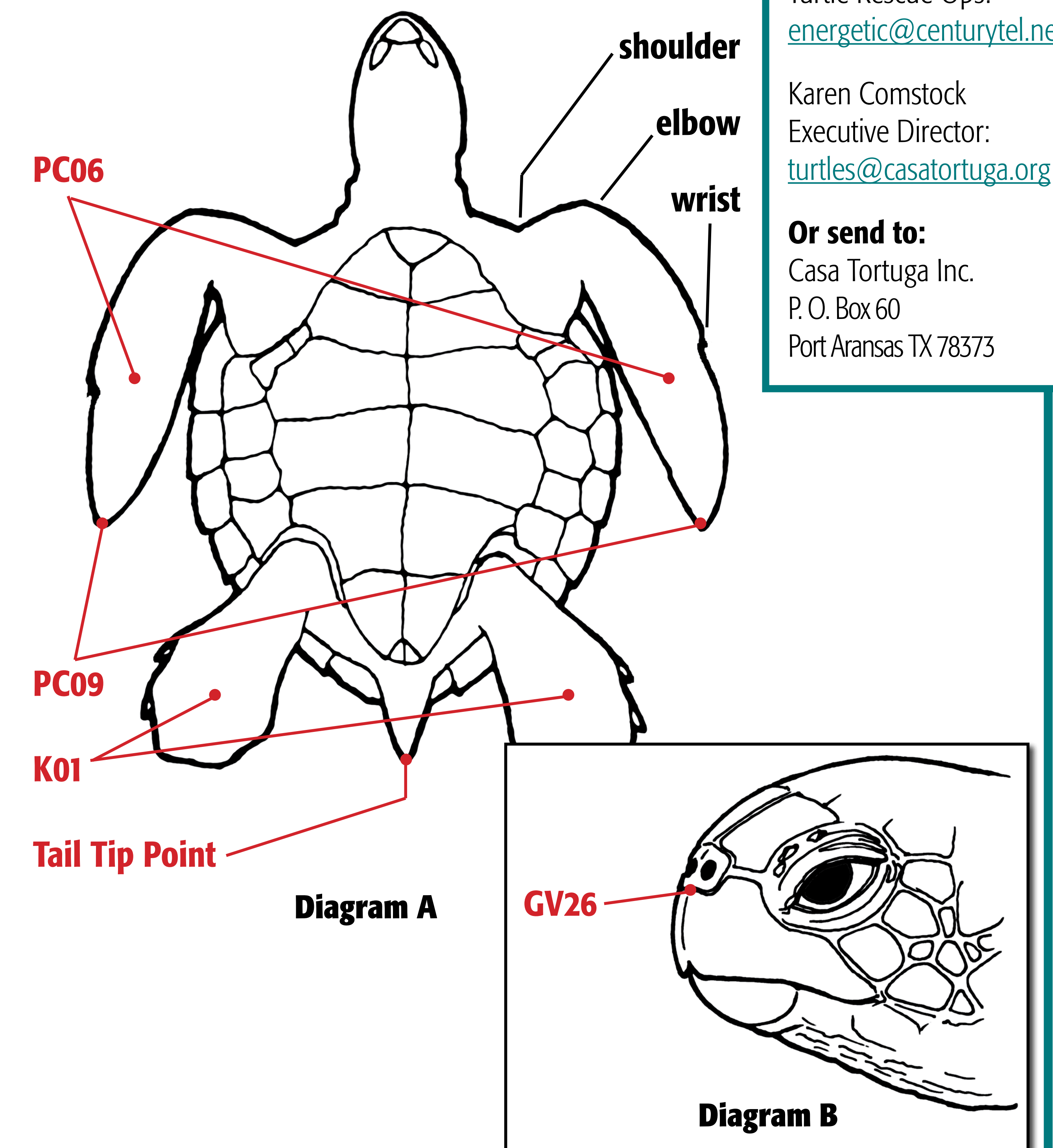
All needle insertions are perpendicular to the surface and applied to both sides of the turtle.

1. Insert a needle (acupuncture needle, sewing needle, straightened fish hook, or other sharp implement) 1/4 to 1/8 inch into point GV26 shown in **Diagram B**. Stimulate the point by rotating the needle vigorously for 30 seconds.

2. Insert a needle (or other sharp implement) into the Tail Tip point shown in **Diagram A** and stimulate vigorously for 30 seconds.

If the turtle appears revived, stop stimulating the points and remove the needles from the GV26 and Tail Tip points after 10 minutes.

3. If vital signs do not return within 30 seconds, leave the needles inserted at GV26 and Tail Tip, but add needles to both sides of turtle at cardioactive points, such as PC06 or PC09, and continue vigorous twirling/"sparrow-pecking" stimulation intermittently for up to 30 minutes.



Dime sized solar powered 10 Hz microamp generator can be placed just below the turtles nostrils at the philtrium, the main sea turtle emergency point. It's as easy as putting on a bandaid.

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Recommended Acupuncture Points for Resuscitation Trial

(All needle insertions are perpendicular to the surface and applied to both sides of the turtle.)

1. **GV26** center of the horizontal line joining the lower edge of the nostrils
2. **Tail Tip** point underside of the tip of the tail
3. **PC09** tip of both front flippers
4. **PC06** underside of both front flippers 1/6 distance between elbow and wrist (midline between radius and ulna)
5. **K01** middle of the underside of both rear flippers (alternate point for consideration in drowning)