

TONIC IMMOBILITY: AN ETHICAL, EASY AND SAFE MEANS OF SEA TURTLE RESTRAINT

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Abstract

Tonic immobility (TI) occurs in many vertebrate groups from sharks (Shark Hypnosis), bony fish (Trout Tickling and Catfish Noodling), frogs, lizards, skinks, iguanas, crocodiles, and birds including chickens and quail (Chicken Hypnosis). TI has been variously attributed to death feigning, fear response and stress. It has been used to immobilise sea snakes for measuring and tagging prior to release. Hatchling sea turtles are susceptible to TI especially when fresh from the nest. Applying finger pressure to the nose and stroking the neck region causes immobility. This makes measuring, weighing and marking hatchlings easy and quick. Subadult green and hawksbill turtles succumb to TI by stroking their neck. Adult green turtles are also susceptible to TI. This sets up safe working procedures that are practised before meeting a turtle on a nesting beach. This is especially important when dealing with companies that need Job Hazard Assessments with strict injury reporting procedures and conservation agencies that want ethical handling of wildlife. Using TI, a small female assistant can restrain an adult green sea turtle returning to the sea after nesting. TI starts with the assistant massaging the neck and throat of the turtle. The couple of minutes of immobility so gained enable a skin biopsy and carapace measurements to be collected and temporary and permanent tags to be applied. This removes the risky and dangerous practice of physically restraining a struggling adult turtle during which the turtle and researcher risk injury.

Introduction

- Tonic immobility (TI) is reported for many vertebrate groups: from sharks as Shark Hypnosis (Davie *et al.* 1993; Alan 1994), bony fish as Trout Tickling (Docet 1904) and Catfish Noodling (Quinn 1993), including frogs, lizards, skinks (Gilman and Marcuse 1949) iguanas (Prestrude and Crawford 1970), crocodiles, and birds including chickens (Jones 1986) and quail (Borchelt and Ratner 1973) as Chicken Hypnosis.
- TI has been variously attributed to death feigning, fear response and stress.

It has been used by the author to immobilise sea snakes for measuring and tagging prior to release (Figure 1).

Figure 1. The author with a Stokes Sea snake relaxed by TI.



Method

- Hatchling sea turtles are susceptible to TI especially when fresh from the nest.
- Applying finger pressure to the tip of the nose or
- stroking the throat and neck region produces immobility.
- This makes measuring, weighing and marking hatchlings easy and quick (Figure 2).
- Sub-adult green, flatback and hawksbill turtles succumb to TI by stroking their throat region and neck (Figure 2).



Figure 2. TI used in measuring (top left), weighing (top right) and initiated by stroking the throat region (lower).

Methods (cont'd)

Adult green turtles are also susceptible to TI. This sets up safe working procedures that are practised before meeting a turtle on a nesting beach (Figure 3). TI starts with the assistant massaging the neck and throat of the turtle. The couple of minutes of immobility so gained enable a skin biopsy and carapace measurements to be collected and temporary and permanent tags to be applied. Using TI, a small female assistant can restrain an adult green sea turtle returning to the sea after nesting (Figure 3).

This is especially important when dealing with companies that need Job Hazard Assessments with strict injury reporting procedures (Figure 4) and conservation agencies that want ethical low-stress handling of wildlife (Figure 5).



Figure 3. Research assistant training with a mock turtle (above) and restraining a green turtle after nesting with TI and maintaining three points of contact, a straight back, feet in front of the flippers and fingers away from the turtle's mouth.

Sea Turtle Related Injuries

Turtle bites off guide's finger

2nd January 2010

A MAN underwent surgery on his finger after a loggerhead turtle bit the tip of it off in the early hours of New Year's Day.

American tourist Kim Valkner waited two years for his opportunity to volunteer at the Mon Repos turtle rookery and, as part of his one-month holiday to Australia, was doing a week's volunteer work in the conservation area.

But in the early hours of Friday, as he helped stop the loggerhead on the beach so rangers could check her tags, his hands slipped from where he was covering her eyes — a normal turtle-stopping procedure.

"I realised my hand had slipped but I didn't have time to move it back, and then snap," Mr Valkner said.

"She was just doing what turtles do."

Turtle rangers reacted quickly to Mr Valkner's accident and got him off the beach and back to base to administer first aid on the finger.

Queensland Ambulance Service paramedics arrived on scene soon after the incident and transported Mr Valkner back to Bundaberg Hospital.

He underwent surgery on the finger yesterday afternoon.

"This is just minor," Mr Valkner said.

"It's not going to stop me from getting back on the sand."

The tip of the finger was not recovered.



NewsMail 17 January 2010

"Do not stand in front of the turtle" a bite after 14 days

Figure 4. Sea turtle related injuries attributable to loggerhead (left) and flatback (right)



Figure 5. TI applied to adult turtles after nesting as a satellite transmitter is attached to a green turtle (left) and as a flatback turtle is tagged “on the run” as she returns to the water (right).



Acknowledgements and References

Many thanks to Dr Colin Limpus who taught me that sea turtles bite whatever you put in their mouth.

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