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### Should a monkey jump on you at the Taj Mahal: Authorities should offer soap bars as part of postexposure prophylaxis.

Authorities at the Taj Mahal should have soap supplies.

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#### Key Messages

*Post exposure prophylaxis [PEP] prevents the rabies virus from entering the central nervous system and hence is the emergency response to a rabies exposure*

*PEP includes; extensive wound washing with water and soap for at least 15 minutes soon after an exposure, a course of rabies vaccine; and if indicated rabies immunoglobulin administration or monoclonal antibodies into the wound*

*Hundreds of Australian travellers are bitten by dogs or monkeys and hence require postexposure prophylaxis.*

*In the event of a monkey bite, ambulance response time can be subject to disparity according to the district and other factors that influence the timeliness of emergency medical services and reports include variations from just under ten minutes, to over two hours.*

*If a patient receives definitive treatment in the first hour after an emergency, this is termed the golden hour theory (or, more scientifically, the “resuscitative hour”).*

#### Commentary

CNN Editorial Research states that in fiscal year 2021-2022, more than 3 million people visited the Taj Mahal, according to statistics from the Indian Ministry of Tourism<sup>1</sup>. They also state that in 2007 as part of an online marketing campaign it was named one of the “New Seven Wonders of the World.”

The Hiltons visited the Taj Mahal in India. A medium sized monkey at the outside balcony viewing area edge while being photographed, leapt at a family member in the direction of their chest making contact with their T-shirt. No punctures, bites or scratches were felt. The chest [front, lateral sides], back and arms [front, back, inside and outside] were discretely and quickly examined for any scratches or bites after walking a short distance to an area without other tourists. No visible bites or scratches were evident, although there were a couple of small pimple type marks on one arm, but apparently these were present prior. Given I was not sure myself about these arm markings, the security guards in attendance were asked if there was a soap bar available. They replied saying we don't have soap here and you'll have to walk to the outside toilet facilities which are 5-10 minutes away. Alternatively, we proceeded to go to the waiting line and security check point in order to enter the main building

with chambers and asked both the officials at the security check gate, and also the authorities once we were inside the building for soap. The family member who was jumped on, didn't consider it necessary to walk to the outside toilet, as given they didn't feel any scratch from the animal, washing with soap seemed unwarranted and unnecessary. The Hiltons had pre-travel health appointments at a specialist travel clinic, where they were given health information booklets and the recommended vaccinations including rabies x3.

In fact, every day prior to this day I had kept a soap cake in my white shirt pocket, but I had decided to wear a more fashionable shirt this day for photographs, which didn't have a pocket and I had thought that given it was a major tourist attraction that the authorities would have soap on hand if needed. Given the first aid protocol, and the fact balcony and chamber authorities didn't have soap, it does highlight the need for soap to be given to these staff at the building for their first aid kits [should they actually have these] should a tourist require this. It should be noted also that while there was not a sign warning tourists to not get too close to the monkeys were this incident occurred, we did later on see a sign written as such some distance away from where the incident occurred.



The World Health Organisation Fact Sheet on rabies states, that post exposure prophylaxis [PEP] prevents the virus from entering the central nervous system and hence is the emergency response to a rabies exposure<sup>2</sup>. This includes; extensive wound washing with water and soap for at least 15 minutes soon after an exposure, a course of rabies vaccine; and if indicated rabies immunoglobulin administration or monoclonal antibodies into the wound.

Potential rabies and Australian bat lyssavirus exposures are managed with rabies PEP<sup>3</sup>. The authors state that Australian guidelines recommend PEP involves thoroughly washing the wound and administering a rabies vaccine course. There may also be indication for human rabies immunoglobulin (RIG) if the person has not previously received the rabies vaccine. These authors report that Australia is free from terrestrial rabies. Yet there still remains the risk for returning travellers of the real risk of domestic bat exposures and terrestrial mammal bites in particular from regions where the disease is common.

Cohen in 2011, in a manuscript titled; 'offering travellers pre-exposure vaccination' the author writes, that In India alone, there are an estimated 25,000 deaths per year from the disease<sup>4</sup>. Based upon Victorian Department of Human Services health data from 2008 to 2010 the cases of post exposure rabies cases has increased over those years, from 113 in 2008 to 217 in 2010. Hence extrapolating that nationally would mean that hundreds of Australian travellers are hence bitten by dogs or monkeys and hence require PEP. The author also reports that yearly, 15 million people globally require post exposure vaccination.

Later that day, the family member whom the monkey leapt at reviewed some information on line on the topic of rabies and decided to attend a hospital as a precautionary measure, in order to enquire about a post exposure vaccination. We travelled in a tuktuk [by a driver named Alibaba] which on google maps was 10 minutes away by car to a rundown hospital called the district hospital in Agra where the outside building was mostly coloured pink. The person was quickly ushered into triage/ treatment room where the person met a doctor, explained the situation stating that while they didn't feel they were scratched, they wanted to err on the side of caution, so also showed the Doctor the arm markings. A decision was made to administer a rabies vaccination which was performed by a nurse. While I waited, I was saddened to witness some young men being brought into the hospital in handcuffs. I asked one of them if he'd had some lunch, he didn't reply. I waited outside where someone asked me for money, but I had none. Then a gentleman introduced himself as the Chief Operating Officer or the Chief Executive Office [he spoke quietly so I found it difficult to hear him].

After a short time, maybe ten minutes later a lady whom had what looked like a nun scarf on walked over and again she spoke very quietly and I thought she said 'I am Saint Maria'. I smiled nicely at her and said hello and thankyou. I presumed she was an Australian nun equivalent or maybe she was dressed in Indian traditional dress. According to Wikipedia,

A ghonghat (ghunghat, ghunghta, ghomta, orhni, odani, laaj, chunari, jhund, kundh) is a headcovering or headscarf, worn primarily in the Indian subcontinent<sup>5</sup>. This lady's head scarf was not long, so I figured it looked more like what I envisage a religious Nun would wear in Australia, so maybe she was an Indian equivalent Nun of an Indian faith. She then indicated to me that the patient had been seen. Alibaba [our tuktuk driver] was there waiting to drive us promptly back to our hostel. He entertained us with his conversation. Of course, he was deserving of a considerable extra tip that day for his prompt and patient service.

Shaw and colleagues in 2003 reported on illnesses of returned travellers presenting at GeoSentinel sites in New Zealand<sup>6</sup>. The authors report on 242 diagnoses in 205 GeoSentinel patients in New Zealand, being from November 1997 through to December 2001. Animal bites were reported with a frequency of 20 patient reports, comprising 10% of patients. It must be remembered that these bites may or may not involve exposure to rabies. It was also not known to what extent rabies had been talked about with these people prior to travel and only quarter of these people had pre-travel health advice.

Human rabies continues to be endemic in India except apart from several islands<sup>7</sup>. A community survey covering a population of 10.8 million in mainland India reported that annual incidence of human rabies was estimated to be 17,137 (95% CI 14,109–20,165). The principal animal responsible for rabies deaths was dogs [96.2%], while cats resulted in 1.7% of rabies deaths and 2.1% of deaths were lastly other animals.

This scenario at the Taj Mahal may have been much worse, catastrophic or even fatal if the monkey had bitten the person's neck or elsewhere such that an ambulance may have been necessary. I noted that ambulances had immense difficulty moving quickly through the chaotic Indian traffic. While this is not the main focus of this manuscript, which alternatively was to highlight the requirement for soap to be with authorities, it is interesting nevertheless to also report on how difficult it may have been to have prompt transport to hospital.

Jana and colleagues reported on disparity of districts and factors that influence the timeliness of emergency medical services in Maharashtra, India<sup>8</sup>. While this is an alternative location to Agra, concerning is the finding that the analysis which included 38,823 records (emergency: 16,197 and hospital-to-hospital transfer: 22,626), in November 2022, report that the average ambulance response time across the districts was 134.5 min for emergency cases. This is strikingly higher than the average time in Asia reported in a systematic review of response times in the emergency services in a 2018 publication<sup>9</sup>. While the authors reported that Asia had a shorter mean response time (7.2 mins), the table of individual studies did not list an Indian publication that was included. The response time in Oceania was (8.0 mins).

An analysis of the Maharashtra Ambulance Service "108" states that for emergency calls, the median response time ranged between 20 and 25 minutes<sup>10</sup>. If a patient receives

definitive treatment in the first hour after an emergency, this is termed the golden hour theory (or, more scientifically, “resuscitative hour”).

While I had considered prior that a major tourist attraction such as the Taj Mahal given there are monkeys there, that they would have had soap in their supplies on site with authorities, they did not. As previously mentioned, soap wash facilities were on the outside grounds in the toilet facilities but not with authorities on the viewing balconies where the monkeys were congregating, nor inside the chambers where monkeys were not. It could be argued that alternatively women’s clothing needs to more often incorporate pockets such that people travelling can carry these items such as soap. A search of a major clothing retailer in Australia for ladies’ shirts retrieved 52 ladies’ white shirts of which only 9 had a pocket.

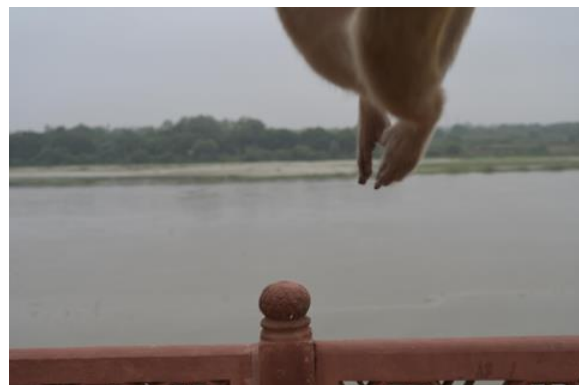
My late grandparents walked along Kurramine Beach in Qld where there were crocodiles and I went there also on couple of occasions. Back in those days, we didn’t have mobile phones, so you just yelled for help in emergencies, but I’m not aware there was ever an emergency with crocodiles. Just like monkeys, crocs can bite, but they took a chance in order to fish. In the garden recently I was weeding and it was quite windy. I ventured inside to find my coffee keep cup, and heard a very loud creak. Where I had been standing an Ash tree split into two, with half the tree crashing down. The fallen part was 88 cm in circumference. Had it hit me, I could have died. Whether it be crocodile infested waters, the risk of monkeys biting you, or walking where trees may topple and break in the wind, life has risks. In Thailand in 2019, we went to the top of a mountain. On a tree there was a sign written on wood; “A selfish genius is a social threat”. You could interpret this in a number of ways, but one interpretation maybe don’t analyse all the risks in life overly so such that you have overly complicated risk algorithms, as you may stifle society’s ability to enjoy the world. Accidents can happen, tragedy can befall you, illness such as rabies or infection can eventuate from a monkey bite. Sometimes it is the case of being in the wrong place at the wrong time or having the misfortune of meeting the wrong person in life. Life is not always fair, and justice may not eventuate. At Joey’s hostel where we were staying in Agra which is the city where the Taj Mahal is location there was a common room wall where visitors wrote comments. One person had written; “If you think adventure is dangerous, try routine it’s lethal”. One late evening at the hostel, I noted there were candles burning in the common room and incense, so I blew the candles out. The manager knocked at our room door realising I had blown the candles out, and asked why I was worried, as this was part of a devotional ceremony where they are burnt for a certain number of days. I told him I’d just been to the Safety conference. He said they are safe; they burn all night. He said there are no problems as someone stays watch all night. In Sep or Oct, Hindus have ‘Navaratri’ where nine nights of worship are observed and candles are lit to honour the goddess Durga and seek her blessings. My over-cautiousness may have been interpreted as disrespectful to

their traditions, but I was unaware of the reason for the devotional candle ceremony.

The Taj Mahal is a monumental landmark. Definitely a destination worth visiting for photography.



**Picture 1; A placid monkey prior to jumping, being photographed strolling leisurely on the balustrade.**



**Picture 2; An angry monkey jumping and leaping into the air, just prior to landing on the photographer’s T-shirt.**

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