

- SOP No:** AHP 58
- SUBJECT:** Creation of deep dermal partial thickness burn injury in pigs.
- REASON FOR USE:** This technique is used as an animal model to replicate severe burns in children.
- POLICY:** This procedure may only be performed by operators skilled in the technique.
- PRECAUTIONS:** Overalls, gloves, closed in shoes  
Skilled assistant
- EQUIPMENT:**
- Anaesthetic
  - Buprenorphine (300µg/mL)
  - Towels
  - Sandbags to position animal
  - Burning device (bottomless Schott bottle covered with plastic wrap and secured with tape, insulated collar around bottle neck, hole in top to insert thermocouple)
  - Foam pad to transfer hot burning device from microwave to animal.
  - 300mL sterile water for each burning device
  - Spray bottle filled with sterile water
  - Microwave
  - Thermometer with wire thermocouple
  - Clock
  - Camera
- PROCEDURE:**
- Ensure the animal is stabilised under anaesthetic. Administer 1mL Buprenorphine (0.01mg/kg, usually just administer 1ml ampoule or 300µg if pig is ~30kg) i.m. in hind flank.
  - Position the animal so that it is lying on its side. Clip the skin of the flank to be burned to remove hair and wipe lightly with wet swabs to clean the skin. The area to be burned should be marked with a marker pen. If the subdermal temperature is to be monitored, the probe should be inserted under the skin via a cannula ([SOP AHP 57](#)). Place towels around the animal in case of any spills or leaks from the device to protect the animal and personnel. Lift the flank of the animal so that the burning surface curves upward to maintain good contact with the device.

- **Fill the burning device bottle with 300mL water and place it on the heat pad in the microwave. Heat bottle in the microwave on HIGH for approximately 4min. Keep stopping the microwave to check the temperature of the water inside the bottle using the thermometer (insert the thermocouple down through the hole in the device lid). Swirl the water inside the bottle to mix it and prevent boiling over. When the temperature of the water is approximately 93.5°C, take the bottle out and allow it to cool, while monitoring the temperature of the water continuously. Count down the temperature aloud so others can hear.**
- **When the water temperature in the device reaches ~92.4°C, lightly mist the surface of skin to be burned with the sterile water. This improves the contact and transfer of heat from the device to the skin.**
- **When the temperature of the water in the device reaches 92.0°C, place the device on the skin surface. While looking at the clock, count 15 seconds of contact. After this time, remove the device.**
- **Immediately take photos of the burn wound surface for later reference.**
- **Administer post-operative analgesia according to the score-sheet.**

**RECOMMENDATIONS:**

**DATE ISSUED:** 28 April 2010

**REVISED:**

**REFERENCES**

1. Cuttle L, Kempf M, Phillips GE, Mill J, Hayes MT, Fraser JF, et al. A porcine deep dermal partial thickness burn model with hypertrophic scarring. *Burns*. 2006 Nov;32(7):806-20.
2. Kempf M, Cuttle L, Liu PY, Wang XQ, Kimble RM. Important improvements to porcine skin burn models, in search of the perfect burn. *Burns*. 2009 May;35(3):454-5.