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## UC Davis - Erectile Dysfunction

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**Protocol status:** Working

We use this protocol and it's working

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**Protocol Integer ID:** 20780

**Keywords:** Erectile Dysfunction, cardiovascular disease, diabetes, hormonal insufficiencies.



## Abstract

### Summary:

Erectile function is well regulated by vasorelaxant and vasoconstrictive mechanisms, which can be perturbed by various disease states including cardiovascular disease, diabetes, and hormonal insufficiencies. This protocol enables us to assess erectile function by measuring the mean arterial blood pressure (MAP) and intracavernosal pressure (ICP) upon electrical stimulation of the cavernous nerve.

**Modified from:** Burnett et al Science. 1992 Jul 17;257(5068):401-3.; Quinlan et al J Urol. 1989 Mar;141(3):656-61.; and Jin et al J Sex Med. 2008 Mar;5(3):544-51.

## Materials

### MATERIALS

⊗ pentobarbital **Cardinal Health**

⊗ S48 square wave stimulator **Grass Instruments**

⊗ Dissecting scope **Zeiss**

⊗ PowerLab **AD instruments**

⊗ pressure transducer **AD instruments**

### Note:

**AD Instruments - Data Acquisition Systems for Life Science, RRID:SCR\_001620**

## Safety warnings



### **WARNING:**

***All blood components and biological materials should be handled as potentially hazardous. Follow universal precautions established by CDC when handling and disposing of infectious agents.***

- 1 Rats or mice are anesthetized with an intraperitoneal injection with 50 mg pentobarbital/kg weight.
- 2 A midline incision was made from umbilicus to pubis.
- 3 The penis was denuded of skin, and the prepuce circumcised. The testes and epididymides were repositioned into the abdomen after they were divided from their scrotal attachments.
- 4 Bipolar silver wire electrodes were attached unilaterally to the cavernous nerve that arises from the ipsilateral pelvic plexus situated dorsolateral to the prostate.
- 5 Intracavernous pressures were measured (Gould Polygraph, Cleveland, Ohio) with a 25-gauge needle inserted unilaterally at the base of the penis and connected to a pressure transducer.
- 6 Penile erection was induced electrically with a Grass S48 square wave stimulator at 1-5 volts, 16 htz for 1 min.
- 7 Neurostimulation was performed until a 10s maximal pressure recording was achieved, but no stimulation lasted longer than 90s. At least 3 min elapsed between repeated stimulations.
- 8 Maximum intracavernosal pressure (Max ICP) and total area under the ICP curve above baseline were normalized by systemic mean arterial blood pressure (MAP) and used as indices of erectile function.