



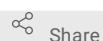
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## Oxycodone IV Self-Administration

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1 Works for me



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### ABSTRACT

This protocol outlines the procedure of conducting intravenous oxycodone self-administration for the GWAS experiment.

### Timeline of experiment:

After animal arrival and 2 weeks of quarantine, animals will go under intravenous catheterization followed by 1 week of recovery from surgery. After recovery, animals will undergo 4 days of short access (2h/day) oxycodone self-administration under a fixed ratio schedule (FR1). The animals will then run a session under a progressive ratio schedule of reinforcement. Next, the animals will undergo 14 days of long access (12h/day) oxycodone self-administration (FR1) followed by another session under the progressive ratio schedule. In the final phase, buprenorphine, methadone, and naltrexone will be tested on oxycodone self-administration under the progressive ratio schedule. This phase will last 2 more weeks.

### PROTOCOL CITATION

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<https://protocols.io/view/oxycodone-iv-self-administration-btmpnk5n>

### KEYWORDS

oxycodone, opioid, self-administration

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48527

Before surgery, animals are handled and weighed. Each animal is scanned by their RFID and assigned an animal ID.

Each self-administration session is done during the animals' dark cycle and at the same time for each test day.

For long access sessions, place a handful of rat chow and a wooden block for chewing inside the chamber in the corner away from the levers while they are running the session. Rats need access to food since the session duration is 12 hours long. An added wooden block will prevent self-injurious behavior.

- 1 Bring animals to the experimentation room where you will run self-administration.
- 2 Pick up the animal from its cage and place it in operant chamber.
- 3 With a microchip reader, scan RFID on the chamber door then scan the rat. Animals must be scanned each test day to ensure that they run in the same operant chamber throughout the experiment (a green check mark appears when animal is in correct chamber).

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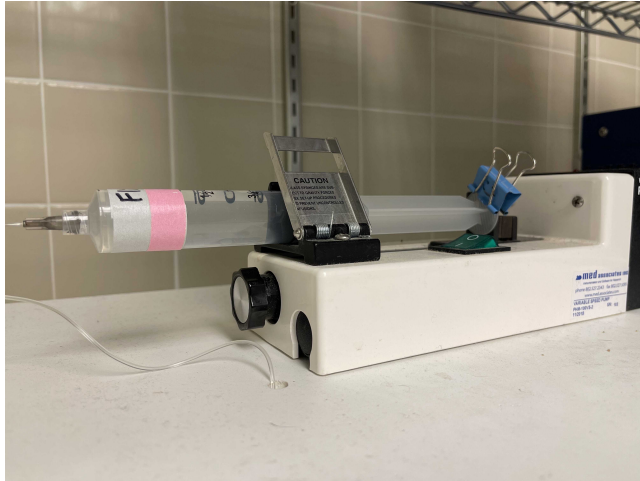
	A	B	C	D	E	F	G	H	I	J	K	L	M
		Check	Tag		Rfid	Date	Time	Comment	Session:	Lga07	Cohort:	C12	
1		C12LgA07	Box ID OK	Box: 1110-1	F1201	933000120147092	3/23/2021	4:18 PM					
2		C12LgA07	Rat ID OK	F1201	#N/A	933000320188737	3/23/2021	4:18 PM					
3		C12LgA07	Scan the box >>>>	Rat									
4		C12LgA07	Scan the rat >>>>	Box									
5		C12LgA07		#N/A	Box								
6		C12LgA07		#N/A	Box								
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12		C12LgA07		#N/A	Box								
13		C12LgA07		#N/A	Rat								
14		C12LgA07		#N/A	Rat								
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21		C12LgA07		#N/A	Rat								
22		C12LgA07		#N/A	Rat								
23		C12LgA07		#N/A	Box								
24		C12LgA07		#N/A	Box								

Room BSB 273-B

Box	Rat	Check
1110-1	F1201	✓
1110-2	F1202	✗
1110-3	F1203	✗
1110-4	F1204	✗
1110-5	F1205	✗
1110-6	F1206	✗
1110-7	F1207	✗
1110-8	F1208	✗
1110-9	F1209	✗
1110-10	F1210	✗
1110-11	F1211	✗
1110-12	F1212	✗
1110-13	F1213	✗
1110-14	F1214	✗
1110-15	F1215	✗
1110-16	F1216	✗

+ Info - Rat list +    BSB273-B -    BSB273-C -    BSB273-D -    BSB273-E -    Chamber ID -    Session -

- 4 Flush the line by turning the knob on the pump to clear away any air bubbles. Make sure that drug stops dripping from the line before connecting to the catheter.



Line is connected to syringe that is attached to a pump.

- 5 Pick up the animal and remove the cannula protector (a metal cap) and hoodsie (catheter port cover) from the catheter mounted on the back of the animal.
- 6 Carefully flush the catheter with 0.1-0.2 ml heparinized saline containing cefazolin (20 mg/0.2 ml).
- 7 Connect the line to the catheter port on the animal then screw the metal cap onto the cannula.
- 8 Close the chamber door and outer chamber doors.
- 9 When all animals are loaded, set up MedAssociates program and start the session

The retractable active and inactive levers will protract when the session is initiated. An active lever press (FR1) results in a 0.1 ml infusion of oxycodone in saline (0.15 mg/kg/infusion) over 4 seconds and a light that remains lit for 20 seconds during which another active lever press does not deliver oxycodone. An inactive lever press produces no results.

- 10 Leave the room and keep the lights off during the testing session.

#### MedAssociates Setup

- 11 After loading animals in operant boxes, open the MedAssociates Program on computer.

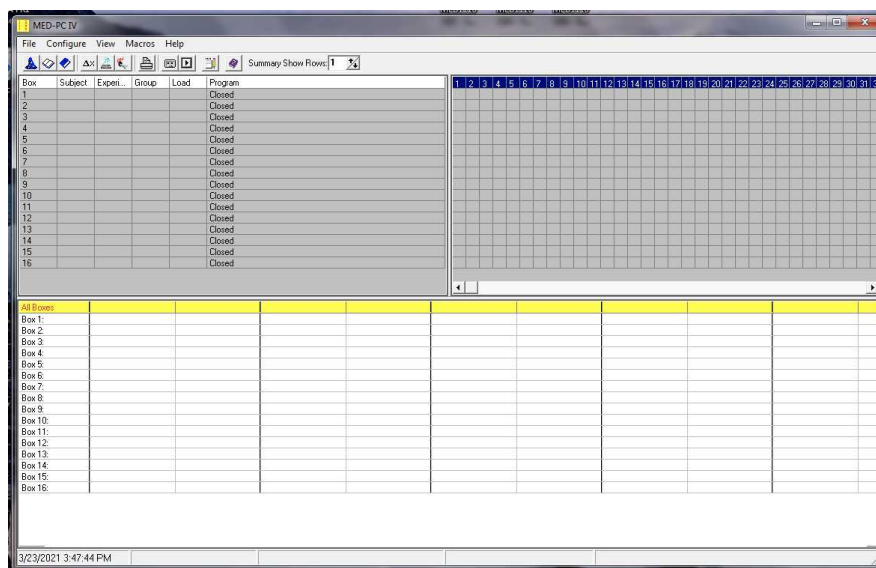


MedAssociates software shortcut

11.1 Click 'Yes' when the following prompt appears:



12 Go to 'File' on the top left corner then 'Open Session' (or click the open book icon).



This window opens when you open the MedAssociates software.

12.1 Click the dropdown under 'Procedure' and select the program that is designed for the session you want to run.

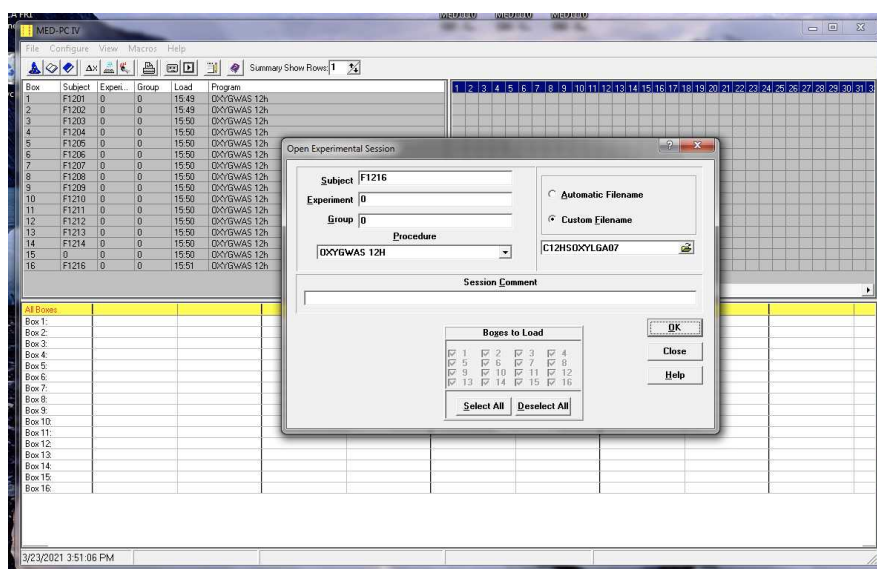
Session	Program
Short Access	GWAS 2HNEW
Long Access	OXYGWAS 12H
Progressive Ratio	GWAS PR OPIATES
Treatments	GWAS PR OPIATES

Programs to run for each type of session.

12.2 Select 'Custom Filename' and name file with cohort #, project, session day

12.3 Starting with Box 1 under 'Boxes to Load', enter the animal ID in 'Subject' field then click 'OK' and load the next box. Enter '0' for animals that are absent in the study.

If you mistype the animal ID while loading the boxes, click 'Close Session' (closed book icon or under 'File'), select 'Stop, Abandon Data (StopKill)', select all boxes then click 'OK'. Repeat step 12 to reload the boxes.

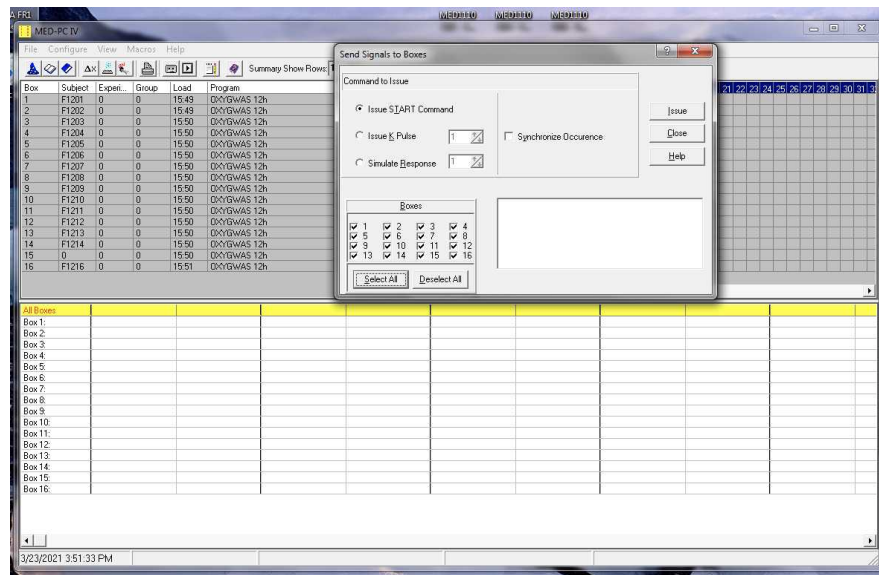


Example of the program setup for a long access session. Notice 'Box 15' contains '0' under 'Subject', this means that the animal that usually runs in this box was not present for this session.

12.4 Click 'Close' when all boxes are loaded.

13 Go to 'Configure' > 'Signal'

13.1 Click 'Select all' under 'Boxes' to initiate all the boxes at the same time



13.2 Click 'Issue' to begin session

#### Post-session

- 14 Enter the room and turn on the lights.
- 15 Open the chambers, pick up the animal and disconnect the metal cap and line from the catheter.
- 16 Place the hoodie and cannula protector back onto the catheter port.
- 17 Return the animal to its cage and bring all the animals back to their housing room.
- 18 Pull out the tray from the operant chamber, discard the dirty bedding, clean the tray with quatricide (disinfectant), then replace with clean bedding.

18.1 Before placing tray back into the chamber, clean out any bedding in the corners and sides with a duster or brush.

19 Clean the interior of the chamber with quatricide and wipe down with paper towels.