

**Journal of Visualized Experiments**  
**2017 Impact Factor: 1.184**

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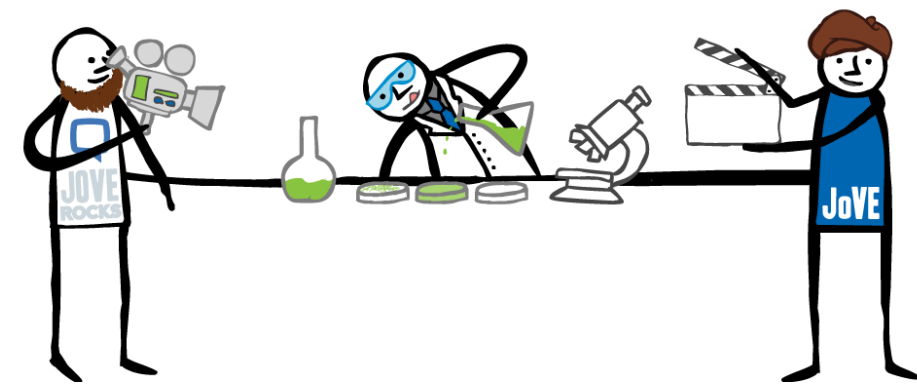


FlySheet 飛資得 醫學資訊  
Med-Informatics

# OUTLINE

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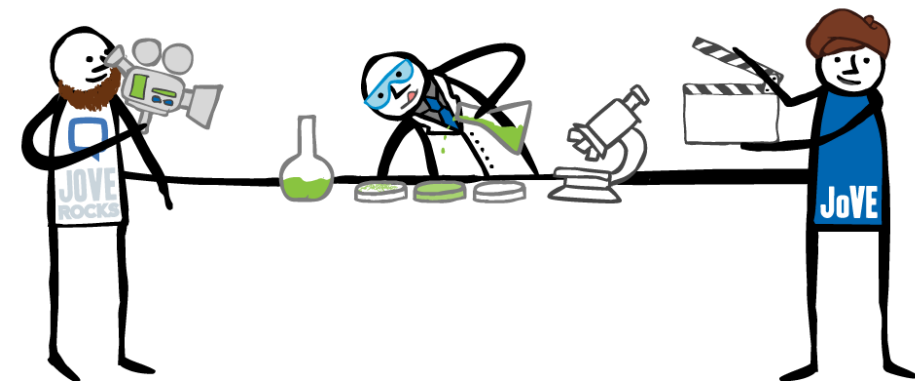
- 什麼是JoVE ?
- 平台及操作介紹
- 建立個人帳號
- 使用效益



# 什麼是JoVE？

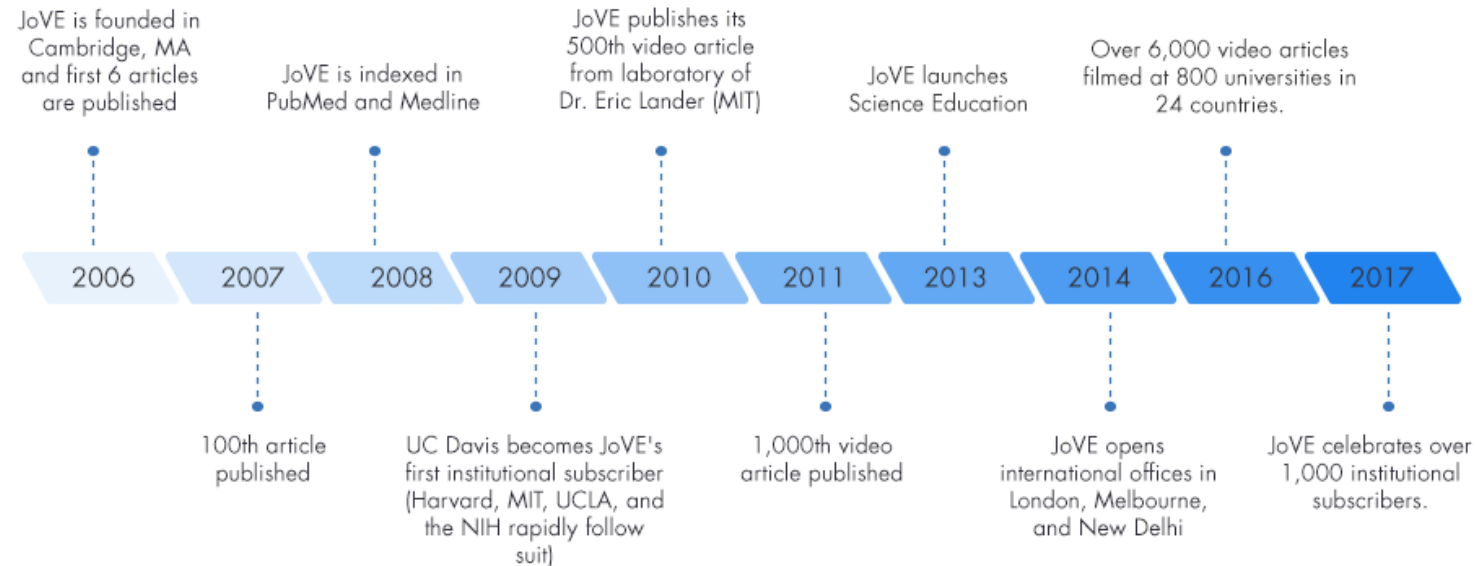
# JoVE-創新的科學出版形式

- The Journal of Visualized Experiments
- 將實驗技術影像化，以影片形式出版
- 成立於2006年，第一個經過Peer Reviewed，收錄於PubMed的  
影片期刊
- 涵蓋生物、醫學、化學...



# 發展歷史

- 從 2006 年至今，發展出 13 個不同的主題，除了最早的生物領域，還包含了臨床&轉譯醫學、化學等主題，甚至推出 Science Education 系列，目前共 8 大主題、37 套教學資料庫，包括心理學、生物學、化學、臨床技能等主題。



# 服務目標及宗旨

- **效率的知識傳播形式**，影片將實驗過程透明化，且可重複觀看，節省時間、空間、資源上的成本。  
解決現今實驗技術複雜，經常一個實驗費時數週、實驗設備成本昂貴...等不易重複操作的狀況
- **影片紀錄的內容更詳盡**，比起單純的文字、圖表形式，更能將複雜且多面向的實驗過程記錄下來。  
解決文字無法精確描述創新實驗技術的困難



# 平台及操作介紹

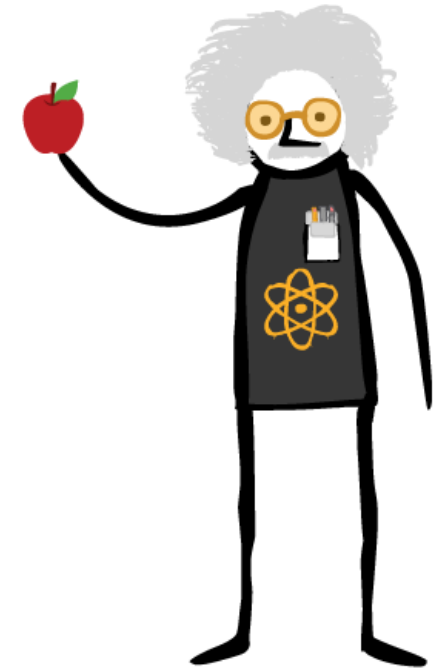
# 平台功能簡介

## • 主題刊 Video Journal

- 每月出刊，可依**時間搜尋**過刊
- 影片包含摘要、簡介、討論、步驟、結果等內容文字檔
- 可透過**內文**進行檢索
- 比照文字期刊的形式，包含DOI碼、期刊、作者資訊等引用格式

## • 教學資料庫 Science Education

- 部分內容已完成多國語言翻譯，包括中文版及中文發音。
- 每個主題內包含若干個子主題，每個子主題收錄15個教學影片。
- 影片包含基礎說明、步驟、及影片結語。
- 每支影片搭配與該主題相關的五篇JoVE期刊文獻做實務上的學習。





# 13主題刊、8套教學資料庫

## VIDEO JOURNAL

BEHAVIOR  
BIOENGINEERING  
CANCER RESEARCH  
DEVELOPMENTAL BIOLOGY  
ENVIRONMENT  
IMMUNOLOGY AND INFECTION  
NEUROSCIENCE  
METHODS COLLECTIONS

BIOCHEMISTRY  
BIOLOGY  
CHEMISTRY  
ENGINEERING  
GENETICS  
MEDICINE  
IN-PRESS

行為研究學  
生物工程  
癌症研究  
發展生物學  
環境科學  
免疫與傳染研究  
神經科學

生化研究  
生物學  
化學  
工程學  
基因研究  
醫學



## SCIENCE EDUCATION

ADVANCED BIOLOGY  
CHEMISTRY  
ENGINEERING  
PHYSICS

BASIC BIOLOGY  
CLINICAL SKILLS  
ENVIRONMENTAL SCIENCES  
PSYCHOLOGY

進階生物學  
化學  
工程學  
物理學

基礎生物學  
臨床技能  
環境科學  
心理學



# JoVE平台 - 1 檢索及瀏覽功能



The screenshot displays the JoVE website's search and video sections. At the top left is the JoVE logo. A search bar is highlighted with a red box, containing the text "Advanced" and a magnifying glass icon. To the right of the search bar are buttons for "檢索列" (Search List), "A TRIAL", and "SIGN OUT". Below the search bar is a navigation menu with buttons for "ABOUT JoVE", "FOR LIBRARIANS", "VIDEO JOURNAL", "SCIENCE EDUCATION", and "PUBLISH". The main content area features a video player on the left, highlighted with a red rounded rectangle. The video player shows a pipette and a microplate, with the text "NOW PLAYING" and a list of video titles: "A Method to Assess Fc-mediated Effector Functions Induced by Influenza Hemagglutinin Specific Antibodies". To the right of the video player is a "影片推播" (Video Recommendation) section with the text "A CATALYST FOR SCIENTIFIC RESEARCH AND EDUCATION". At the bottom of the video player are buttons for "VIDEO JOURNAL" and "SCIENCE EDUCATION".



# JoVE平台 - Advanced Search

joVE

Search by keywords, for example: 'stem cells'

Advanced

START A TRIAL

SIGN OUT

進階檢索

PUBLISH

Use the advanced search feature to refine your search.

and ▾

or ▾

not ▾

+

FILTER BY AUTHOR OR INSTITUTION ^

FILTER BY PUBLICATION DATE ^

FILTER BY JOURNAL SECTION ^

FILTER BY SCIENCE EDUCATION ^

LIST ^

VIDEO JOURNAL

CATALYST

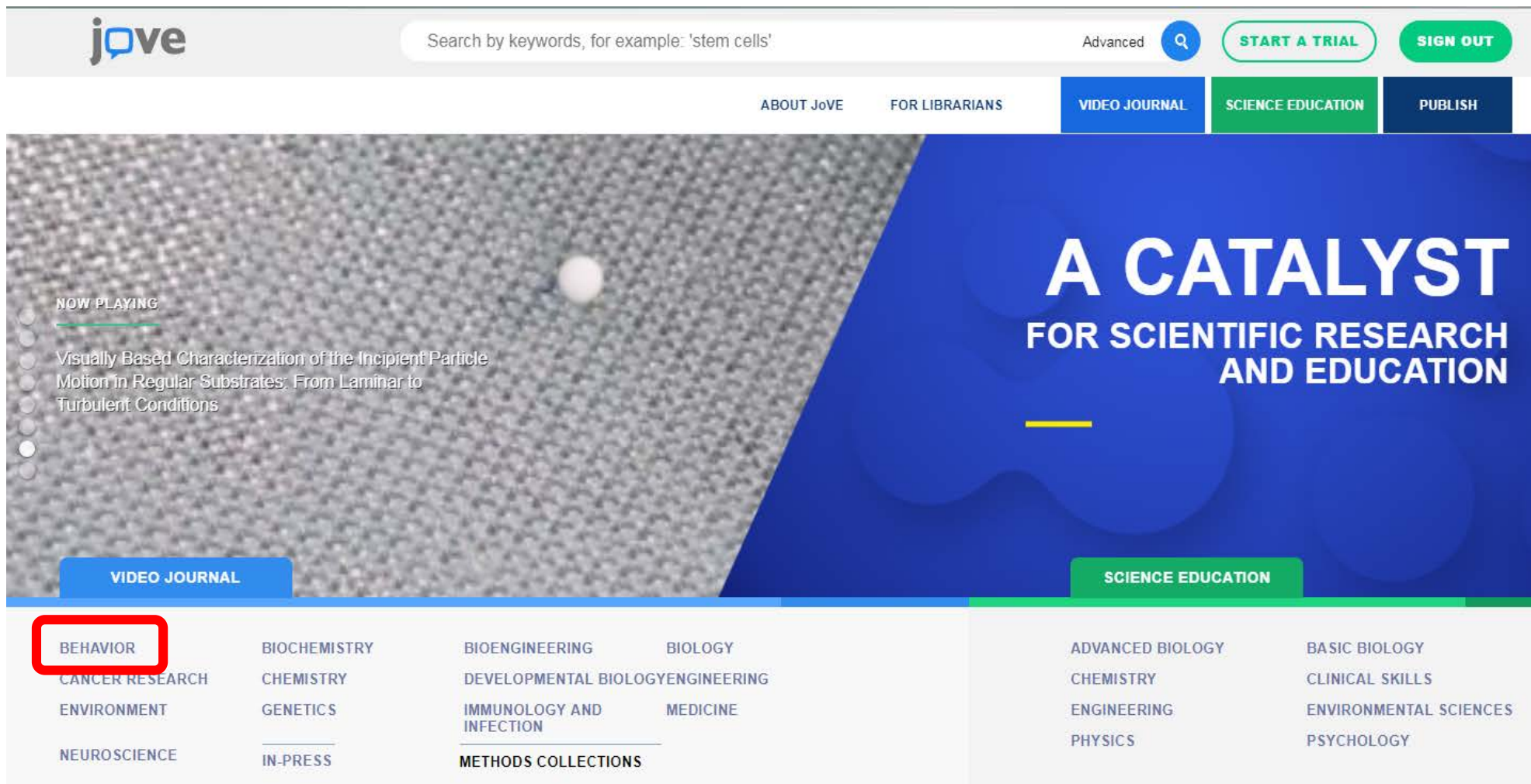
SCIENTIFIC RESEARCH AND EDUCATION

SCIENCE EDUCATION






# 進入期刊



joVE

Search by keywords, for example: 'stem cells'

Advanced  [START A TRIAL](#) [SIGN OUT](#)

[ABOUT JoVE](#) [FOR LIBRARIANS](#) [VIDEO JOURNAL](#) [SCIENCE EDUCATION](#) [PUBLISH](#)

**A CATALYST  
FOR SCIENTIFIC RESEARCH  
AND EDUCATION**

[VIDEO JOURNAL](#) [SCIENCE EDUCATION](#)

**BEHAVIOR**  
CANCER RESEARCH  
ENVIRONMENT  
NEUROSCIENCE

BIOCHEMISTRY  
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BIOLOGY  
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PHYSICS

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ENVIRONMENTAL SCIENCES  
PSYCHOLOGY

- 直接點選首頁 JoVE Journal主題標籤，即可進入該主題刊文獻目錄。
- 文獻依據**出版時間**排序，越新出版的文章排在越前面。



# 進入期刊- 直接點選文章影片即可閱讀

jove Search by keywords, for example: 'stem cells' Advanced **SIGN OUT**

ABOUT JOVE FOR LIBRARIANS VIDEO JOURNAL SCIENCE EDUCATION PUBLISH

JoVE JOURNAL  
**BEHAVIOR**

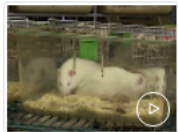
JoVE Behavior includes observational and experimental approaches that seek to understand human and animal behavior.

MOST RECENT ADDITIONS Search Behavior

1 2 3 4 5 6 7 8 9 ... 11 >

255 VIDEO ARTICLES

## A New Method for Inducing a Depression-Like Behavior in Rats



Vladimir Zeldetz<sup>1</sup>, Dmitry Natanel<sup>2</sup>, Matthew Boyko<sup>2</sup>, Alexander Zlotnik<sup>2</sup>, Honore N. Shiyntum<sup>3</sup>, Julia Grinshpun<sup>2</sup>, Dmitry Frank<sup>2</sup>, Ruslan Kuts<sup>2</sup>, Evgeni Brotfain<sup>2</sup>, Jochanan Peiser<sup>2</sup>

<sup>1</sup>Department of Emergent Medicine, Soroka University Medical Center, **Ben-Gurion University of the Negev**, <sup>2</sup>Division of Anesthesiology and Critical Care, Soroka Medical Center, **Ben-Gurion University of the Negev**, <sup>3</sup>Department of Biophysics and Biochemistry, Oles' Honchar Dnipro National University

BEHAVIOR

## The (Spatial) Memory Game: Testing the Relationship Between Spatial Language, Object Knowledge, and Spatial Cognition



Harmen B. Gudde<sup>1</sup>, Debra Griffiths<sup>1</sup>, Kenny R. Coventry<sup>1</sup>

<sup>1</sup>School of Psychology, **University of East Anglia**



# 進入期刊- 閱讀全文

上方：影片區


jove Search by keywords, for example: 'stem cells'

● BEHAVIOR

## A New Method for Inducing a Depression-Like Behavior in Rats

Vladimir Zeldetz<sup>\*1</sup>, Dmitry Natanel<sup>\*2</sup>, Matthew Boyko<sup>2</sup>, Alexander Zlotnik<sup>2</sup>, Honore N. Shiyntum<sup>3</sup>, Julia Grinshpun<sup>2</sup>, Dmitry Frz<sup>1</sup>  
<sup>1</sup>Department of Emergent Medicine, Soroka University Medical Center, Ben-Gurion University of the Negev, <sup>2</sup>Division of Anesthesiology Biochemistry, Oles' Honchar Dnipro National University  
\* These authors contributed equally

PUBLISHED 2/22/2018 0 COMMENTS VIEWS 248 CITE THIS SHARE



進入全文頁面，實驗影片放在頁面最上方；  
影片下方則刊出該實驗研究之全文

下方：全文區

### SUMMARY

This protocol describes a new model by which healthy rats could contract depression over a given time period through contagion by exposure to chronic unpredictable stressed (CUS) rats.

### CITE THIS ARTICLE

[Copy Citation](#)

Zeldetz, V., Natanel, D., Boyko, M., Zlotnik, A., Shiyntum, H. N., Grinshpun, J., et al. A New Method for Inducing a Depression-Like Behavior in Rats. *J. Vis. Exp.* (132), e57137, doi:10.3791/57137 (2018).

### TRANSLATE TEXT TO:

Choose Language...

### ABSTRACT

Contagious depression is a phenomenon that is yet to be fully recognized and this stems from insufficient material on the subject. At the moment, there is no existing format for studying the mechanism of action, prevention, containment, and treatment of contagious depression. The purpose of this study, therefore, was to establish the first animal model of contagious depression.

Healthy rats can contract depressive behaviors if exposed to depressed rats. Depression is induced in rats by subjecting them to several manipulations of chronic unpredictable stress (CUS) over 5 weeks, as described in the protocol. A successful sucrose preference test confirmed the development of depression in the rats. The CUS-exposed rats were then caged with naive rats from the contagion group (1 naive rat/2 depressed rats in a cage) for an additional 5 weeks. 30 social groups were created from the combination of CUS-exposed rats and naive rats.

This proposed depression-contagion protocol in animals consists mainly of cohabiting CUS-exposed and healthy rats for 5 weeks. To ensure that this method works, a series of tests are carried out - first, the sucrose preference test upon inducing depression to rats, then, the sucrose preference test, alongside the open field and forced-swim tests at the end of the cohabitation period. Throughout the experiment, rats are given tags and are always returned to their cages after each test.

A few limitations to this method are the weak differences recorded between the experimental and control groups in the sucrose preference test and the irreversible traumatic



# 進入期刊- 閱讀全文搭配影片

左方:影片全文

右方:影片縮圖

當畫面下拉離開影片時，影片會自動縮圖於全文右方，方便讀者邊看全文邊看影片。

ABSTRACT INTRODUCTION PROTOCOL RESULTS DISCUSSION MATERIALS REFERENCES DOWNLOADS


## ABSTRACT

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A few limitations to this method are the weak differences recorded between the experimental and control groups in the sucrose preference test and the irreversible traumatic outcome of the forced swim test. These may be worth considering for suitability before any future application of the protocol. Nonetheless, following the experiment, naïve rats developed contagion depression after 5 weeks of sharing the same cage with the CUS-exposed rats.



**CITE THIS**

**CHAPTERS**


0:04	Title
0:40	Measuring Depression at Baseline
2:31	Induction of Depression in Rats
4:03	Establishing Depression-contagion in



# 影片期刊全文大綱

Biochemistry, Oles' Honchar Dnipro National University  
\* These authors contributed equally

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01:38 | 07:57

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### CHAPTERS

0:04	Title
0:40	Measuring Depression at Baseline
2:31	Induction of Depression in Rats
4:03	Establishing Depression-contagion in Naïve Rats
4:37	Open Field Test
5:08	Forced-swim Test
5:50	Results: Sucrose Preference, Open Field and Forced Swim Test Performance after Induction of Depression-like Behavior
7:22	Conclusion



# 下載資料- 可透過PDF下載全文



ISSUE 132  
DOI: 10.3791/57137

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## CHAPTERS

- 0:04 Title
- 0:40 Measuring Depression at Baseline
- 2:31 Induction of Depression in Rats
- 4:03 Establishing Depression-contagion in Naive Rats
- 4:37 Open Field Test
- 5:08 Forced-swim Test
- 5:50 Results: Sucrose Preference, Open Field and Forced Swim Test Performance after Induction of Depression-like Behavior
- 7:22 Conclusion



# 閱讀介面介紹

## PROTOCOL

The following procedure was conducted according to the recommendations of the Declaration of Helsinki and Tokyo and the Guidelines for the Use of Experimental Animals of the European Community. The experiments were also approved by the Animal Care Committee at the Ben-Gurion University of the Negev.

### 1. Preparing Rats for the Experimental Procedure

Note: For the experimental procedure, select male Sprague-Dawley rats with no overt pathology, each weighing between 300 and 350 g.

1. House three rats per cage, with chow and water available *ad libitum*, and allow for at least two weeks of adaptation, alternating between 12 h of daylight and 12 h of darkness.
2. Before initiation of the experiment, test all rats for the presence of depressive-like behaviors using a 3-day **sucrose preference test (refer to step 4)**.
3. Exclude rats that are perceived to display depressive-like behaviors and those that are housed in the same cages as such rats, so as to avoid possible spread of depression to unaffected rats before the experiment has begun first, eliminate rats that test positive for depression; then, eliminate rats that are housed in the same cages as the depressed rats.
4. If necessary, exclude additional rats at random to create final groups of 60 rats for the depression experiment, 30 rats for the contagion group, and 30 rats for the control group.
5. Tag rats (using numbered stickers), throughout the experimental procedures. Temporarily transfer rats to single cages during the experiments (in the same room and dark cycle for the CUS, Sucrose and open field tests, and in a different room and dark cycle for the forced-swim test and for one of the stressors (refer to 2.1.7)) and return them to their original social groups at the end.

### 2. The Procedure for the Induction of Depression in Rats



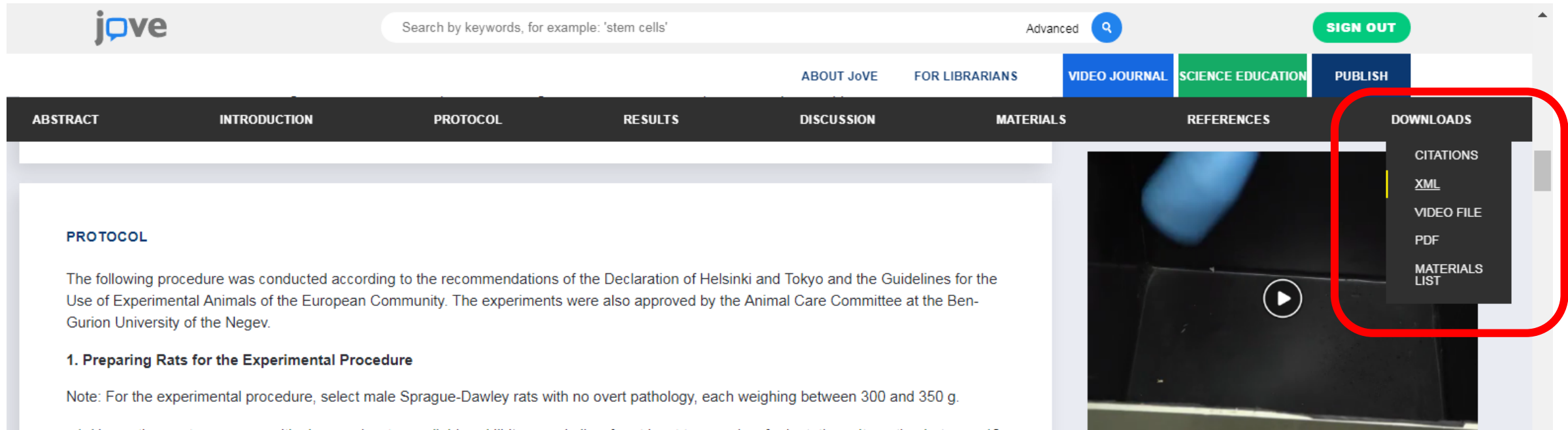
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#### CHAPTERS

- |      |   |
|------|---|
| 0:04 | Title   |
| 0:40 | Measuring Depression at Baseline                |
| 2:31 | Induction of Depression in Rats                 |
| 4:03 | Establishing Depression-contagion in Naive Rats |
| 4:37 | Open Field Test                                 |

當全文畫面下拉時，上方會出現此全文中的  
Abstract, Introduction,  
Protocol, Result 等段  
落標題

# 下載文章資訊



The screenshot shows the Jove website interface. At the top, there is a search bar with the text "Search by keywords, for example: 'stem cells'", an "Advanced" search button, and a "SIGN OUT" button. Below the search bar is a navigation menu with tabs for "ABOUT JoVE", "FOR LIBRARIANS", "VIDEO JOURNAL", "SCIENCE EDUCATION", and "PUBLISH". The "VIDEO JOURNAL" tab is selected. Below the navigation menu is a dark header with tabs for "ABSTRACT", "INTRODUCTION", "PROTOCOL", "RESULTS", "DISCUSSION", "MATERIALS", and "REFERENCES". The "PROTOCOL" tab is selected. The main content area shows the "PROTOCOL" section with the following text: "The following procedure was conducted according to the recommendations of the Declaration of Helsinki and Tokyo and the Guidelines for the Use of Experimental Animals of the European Community. The experiments were also approved by the Animal Care Committee at the Ben-Gurion University of the Negev." Below this text is a section titled "1. Preparing Rats for the Experimental Procedure" with a note: "Note: For the experimental procedure, select male Sprague-Dawley rats with no overt pathology, each weighing between 300 and 350 g." To the right of the text is a video player showing a close-up of a rat's head. A red box highlights a dropdown menu that appears over the video player, containing the following options: "DOWNLOADS", "CITATIONS", "XML", "VIDEO FILE", "PDF", and "MATERIALS LIST".

※ 點選 DOWNLOADS，可以下載：

Citations 引用資料、XML、Video File 影片檔；

PDF 全文、Materials List 實驗材料單



# 影片架構



可放大影片畫面

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## CHAPTERS

- 0:04 Title
- 0:40 Measuring Depression at Baseline
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影片內容與時間軸關係清晰呈現，可直接點選，讓您有效率地瀏覽。



# 建立個人帳號

- 可透過此帳號在校外連線使用

# 申請個人帳戶

The screenshot shows the Jove website interface. At the top, there is a search bar with the text "Search by keywords, for example: 'stem cells'", a search icon, and the word "Advanced". To the right of the search bar are two buttons: "START A TRIAL" and "LOG IN". Below the search bar is a navigation menu with "ABOUT JOVE", "FOR LIBRARIANS", and "VIDEO JOURNAL". A yellow callout box with the text "由此申請個人帳戶 LOGIN>Create an Account" has a red arrow pointing to the "Create an Account" link in the login dropdown menu. The dropdown menu also includes "Email", "Password", "SIGN IN", "Forgot Password", and "Sign in with Shibboleth". The main content area features a video player with the title "NOW PLAYING Lens-free Video Microscopy for the Dynamic and Quantitative Analysis of Adherent Cell Culture" and a large blue graphic with the text "A CATALYST FOR SCIENTIFIC RESEARCH AND EDUCATION". Below the video player are two buttons: "VIDEO JOURNAL" and "SCIENCE EDUCATION". At the bottom, there is a grid of category links including BEHAVIOR, CANCER RESEARCH, ENVIRONMENT, NEUROSCIENCE, BIOCHEMISTRY, CHEMISTRY, GENETICS, IN-PRESS, BIOENGINEERING, DEVELOPMENTAL BIOLOGY, IMMUNOLOGY AND INFECTION, METHODS COLLECTIONS, BIOLOGY, ENGINEERING, MEDICINE, ADVANCED BIOLOGY, CHEMISTRY, ENGINEERING, PHYSICS, BASIC BIOLOGY, CLINICAL SKILLS, ENVIRONMENTAL SCIENCES, and PSYCHOLOGY. At the very bottom, there is a "NEWEST JOURNAL VIDEOS" section and a "FILTER BY SECTION" dropdown menu set to "ALL SECTIONS".

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Creating an account is easy and free.

**With an account you can use your institution's subscription even when off campus, and you can post questions for article authors.** Please note that the domain of your email address must match a subscribing institution for access to be granted.

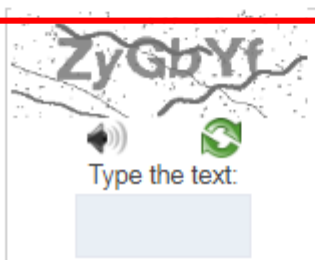
Wondering if your institution subscribes to JoVE? See our [subscriber list](#).

More information about JoVE subscriptions is available [here](#) or contact our [subscriptions department](#) directly.

Fields marked with an asterisk (\*) are required.

First Name *	Institution *
Last Name *	Select a Country *
Institutional Email: * 	Select a Role *
Password *	Please select your field of expertise *
Verify Password *	

**CREATE ACCOUNT**



By clicking "Create Account", you agree to our [policies](#).



建立帳戶後，即使是在校外也能使用JoVE以及向文章作者發問！

**\* 請注意：**  
**email必須與訂戶的網域名稱相符。**

填寫個人資料

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# 貼心小叮嚀

JOURNAL

EDUC

Creating an account is easy and free.

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Fields marked with an asterisk (\*) are required.

Please tell us a little more about yourself.

Chingyi \*

Lee \*

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[ <https://www.jove.com/account/ajax?action=verify&user=403553&verify=j21180> ]

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Thanks for creating an account!

Please check your email for a link to confirm your new JoVE account.

# 建立帳戶完成



# 使用效益

# 資源特色

---

- 內容具權威性
  - ✓ 唯一經同儕審閱的科學影像期刊
  - ✓ 具期刊影響力 (2017 IF : 1.184)
  - ✓ 收錄於PubMed, Web of Science, SciFinder, Scopus, and SCI等
- 影像呈現，能精確表達實驗細節，掌握實驗步驟
- 搭配全文，可輔助論文及報告的撰寫



## 使用效益

- 影音教學日漸普及，有助於學習效率及使用率
- 協助學校及機構
  - ✓ 解決複雜實驗的低複製性
  - ✓ 降低學習新技術時所需消耗的時間與精力
  - ✓ 研究各學科新方法的應用和實驗的創新



# 使用者分享

## • 使用者：

- 普渡大學(Purdue University)動物科學系助理教授， Dr. Theresa 博士
- 位於美國中西部印第安納州，學生人數將近四萬人。校內擁有100間以上的實驗室，從2010年開始訂購JoVE。

## • 使用經驗：

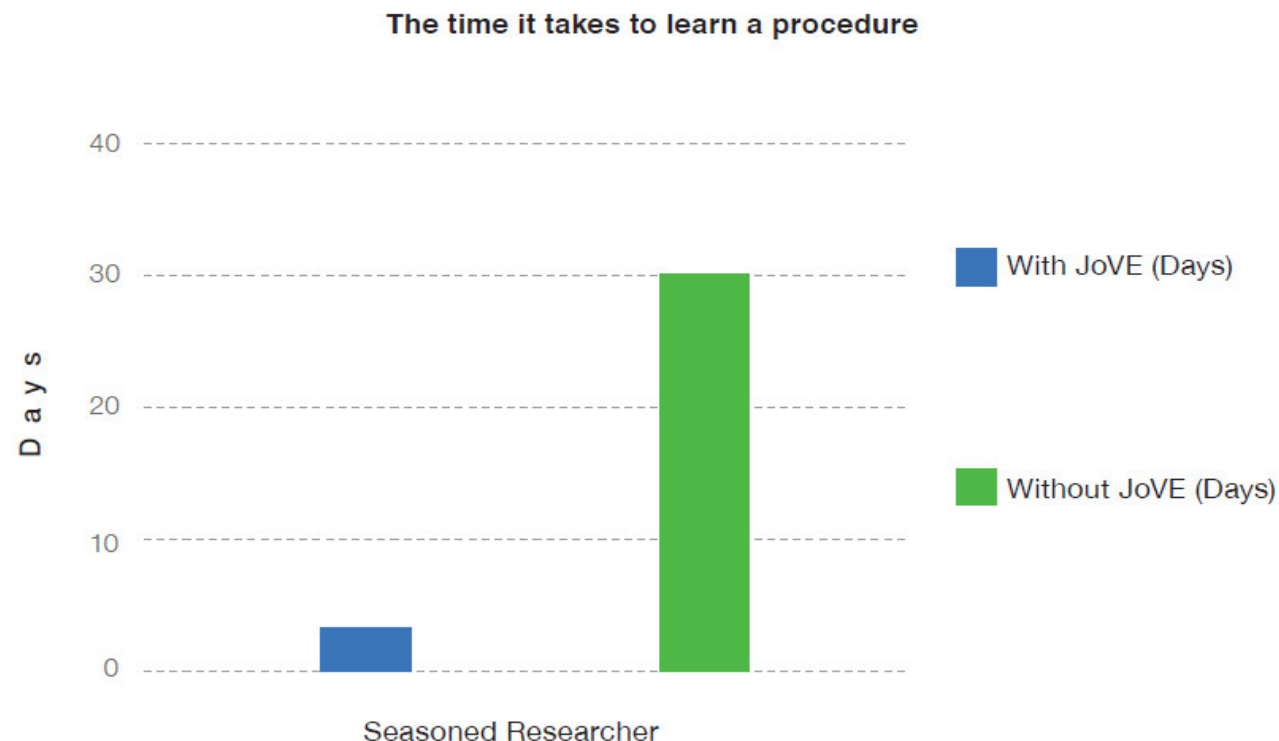
- ✓ 在研究基因活性的過程中，需要了解腦部下丘腦視交叉上核的解剖技術，但這個技術的學習門檻是很高的，希望透過有效率的方式了解這個技術。
- ✓ Theresa從JoVE上搜尋，發現2011年2月在瑞典首都斯德哥爾摩的卡羅林斯卡醫學院發表的相關文章。



# 透過JoVE學習效率提升

## • 使用效益：

- ✓ 透過JoVE，快速掌握她需要的資訊，不用再重新聘用研究員、購買昂貴的研究器材等。
- ✓ 省下學習新技術的時間成本，也替普渡大學省了**US\$15,000**美元。



# 讀者推薦

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# Thank you for your listening!



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