How to Read a Scientific Article

Tips and Suggestions

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Journal

- Name recognition
 - -Science
 - Nature
 - Applied Clay Science
- Impact factor
 - -Science 28.103
 - Nature 31.434
 - Applied Clay Science 2.005



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Actions

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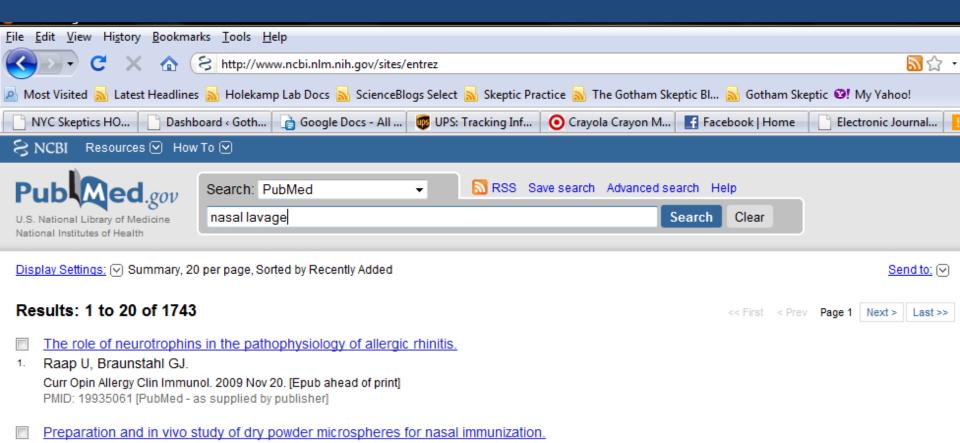
J. Churchman G. Lagaly



Finding Articles

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- Your local librarian
- Your friend who still has access to an institutional license
- Pubmed

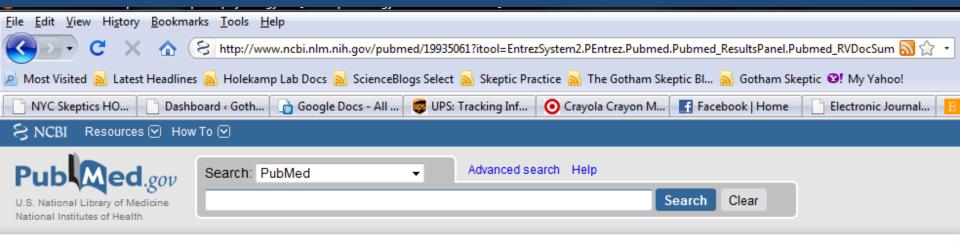
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Tafaghodi M, Rastegar S.

J Drug Target. 2009 Nov 23. [Epub ahead of print] PMID: 19929307 [PubMed - as supplied by publisher]

Finding Articles



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Curr Opin Allergy Clin Immunol. 2009 Nov 20. [Epub ahead of print]

The role of neurotrophins in the pathophysiology of allergic rhinitis.

Raap U, Braunstahl GJ.

aDepartment of Dermatology and Allergology, Hannover Medical School, Hannover, Germany bDepartment of Pulmonary Medicine, St Franciscus Hospital, Rotterdam, The Netherlands.

PURPOSE OF REVIEW: Allergic rhinitis is characterized by allergic airway inflammation and a hyperresponsiveness to nonspecific stimuli which is partly neuronally controlled. In this regard, neurotrophins are prime candidates as mediators of neuronal and immunological plasticity and they will be the focus of the current review. RECENT FINDINGS: Neurotrophins including nerve growth factor (NGF) and brain-derived neurotrophic factor (BDNF) are expressed in the nasal mucosa. The majority of NGF expression has been found in eosinophil granulocytes, the glandular apparatus and peripheral nerves. As shown recently, nasal allergen provocation upregulates BDNF expression in nasal mucosa and NGF expression on peripheral nerves and nasal lavage in patients with allergic rhinitis. In this regard, increased BDNF expression positively correlates with the maximum increase in total nasal symptom score. The neurotrophin receptors including pan-neurotrophin receptor p75, tyrosine kinase A (trkA) and trkB are expressed in nasal tissue. TrkA is expressed on endothelial, p75 on peripheral nerves and trkB on nasal mucosa mast cells that decreases after allergen provocation. The expression of these neurotrophin receptors is increased on peripheral blood eosinophils in allergic rhinitis compared with nonatopic controls. Further, BDNF and NGF exert immunomodulatory functions on eosinophils of patients with allergic rhinitis. Finally, eosinophils of patients with allergic rhinitis are capable of BDNF and NGF production. SUMMARY:

Neurotrophins represent prime candidates in upper airway pathophysiology in allergic rhinitis. Research on neurotrophins in allergic rhinitis is thus becoming a progressively more exciting field and may reveal new and promising therapeutic options for the future.

Author Order

Piled Higher and Deeper by Jorge Cham

www.phdcomics.com

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THE AUTHOR LIST: GIVING CREDIT WHERE CREDIT IS DUE

The first author Senior grad student on the project. Made the figures. The third author
First year student who actually did
the experiments, performed the
analysis and wrote the whole paper.
Thinks being third author is "fair".

The second-to-last author Ambitious assistant professor or post-doc who instigated the paper.

Michaels, C., Lee, E. F., Sap, P. S., Nichols, S. T., Oliveira, L., Smith, B. S.

The second author
Grad student in the lab that has
nothing to do with this project,
but was included because
he/she hung around the group
meetings (usually for the food).

The middle authors
Author names nobody
really reads. Reserved
for undergrads and
technical staff.

The last author
The head honcho. Hasn't even read the paper but, hey, he got the funding, and his famous name will get the paper accepted.

JORGE CHAM @ 2005

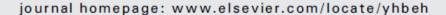
Author Order

Hormones and Behavior 55 (2009) 329-337



Contents lists available at ScienceDirect

Hormones and Behavior





Fecal glucocorticoids reflect socio-ecological and anthropogenic stressors in the lives of wild spotted hyenas

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The Pieces

Abstract
Introduction
Methods & Results
Discussion
References

Abstract

- SHOULD YOU READ THE WHOLE PAPER?
- Mini paper
 - Background 1-2 sentences
 - Methods 1-2 sentences
 - Results 2-3 sentences, rarely stats
 - Conclusion 1 sentence
 - Ramifications 1 sentence
- Over simplified, uninformative for facts

Introduction

- Provides context and background
- Sets up aim and goals
- What to look for:
 - Identify the claim/primary argument
 - Asses evidence/background
 - Establish vocabulary and acronyms
 - D.A.F.T. Dust and Aerosol Measurement Feasibility Test
 - S.N.O.T Sino-Nasal Outcome Test

Methods and Results

- Don't get bogged down in the details
- Read them one at a time
- Reread them together

2.5. Statistical analysis

Data were log-transformed before analysis if not normally distributed. Procedural covariates (sample collection time and hyena identity) were analyzed with a step-wise regression allowing for each predictor variable to be measured while controlling for reproductive state. Significant predictors were then further investigated using within subjects analyses. Differences among reproductive states (immature, pregnant, and lactating) were evaluated using one-way analysis of variance (ANOVA). Along with test statistics, means and standard errors are presented. For further investigation of significant differences, two-tailed t-tests were used except when testing specific directional hypotheses based on expected differences in hormone concentrations between reproductive states, as when comparing reproductively immature and mature females, or pregnant and lactating females; in these cases one-tailed tests were used. To examine differences among trimesters of pregnancy, a post hoc Tukey's analysis was performed for both plasma and fecal samples. When log-transformed data

3.4.1. Procedural covariates

To evaluate procedural covariates associated with our sampling technique and to avoid pseudoreplication, a step-wise regression was used to determine how much variation in fE concentrations could be explained by collection time (morning, 06:00-09:00, or evening, 17:00-20:00) and individual identity, after reproductive condition had been controlled. The full model yielded an $R^2 = 0.07$. $F_{3.536} = 14.09$, P < 0.001. Reproductive state (immature, pregnant, and lactating) explained a significant portion of the variance in fE (P < 0.001). Collection time was a significant predictor over and above the variance explained by reproductive state (P = 0.009), whereas hyena identity was not (P = 0.22). The effect of collection time was further examined by pairing morning and evening samples for 35 individuals. Concentrations of fE were significantly higher in morning than evening samples ($t_{34} = 4.19$, P < 0.001). Therefore all subsequent analyses utilized only morning samples.

Discussion

 Do the concluding statements adequately reflect the results of the study?

- Red flags-Authors spend a lot of time:
 - Explaining why they didn't find what they expected
 - Focusing on a result that was not the original intent of the study
 - Conclusions don't quite match the abstract

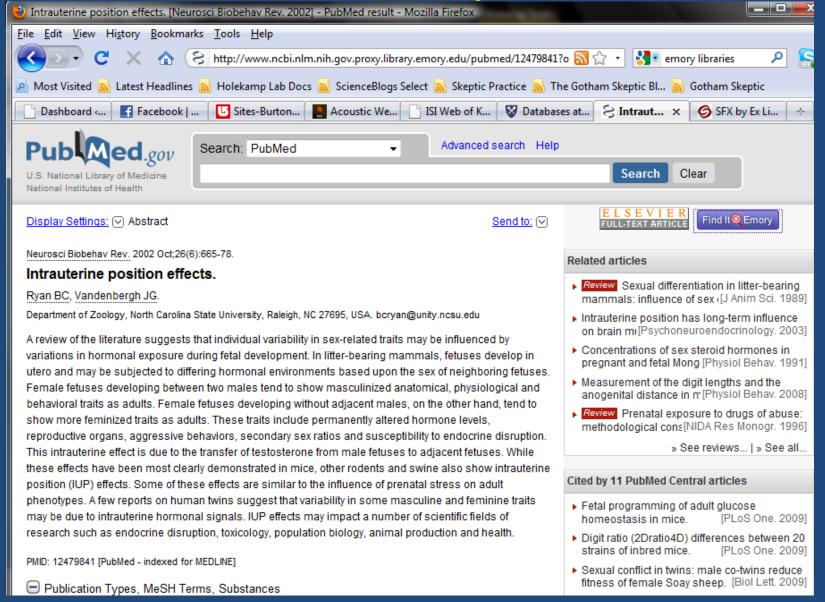
References

- Leads to prior papers from that group
- And on that topic

BUT!

Should cite others' research thoroughly!

Cited By:



Gerbil Article

Intrauterine position

- Ratio of male and female fetuses affects development
- 2F females
- 2M females

Enjoy!

Links

- PhD Comics: http://www.phdcomics.com/
- PubMed: http://www.ncbi.nlm.nih.gov/pubmed/
- PLoS: http://www.plos.org/
 - This is a new attempt at open source access to primary literature for all
 - They publish research articles on a variety of topics
 - Wave of the future?
- Nature available electronically through New York Public Library: <a href="http://catalog.nypl.org/search~S1?/snature/snature/snature/1,68,86,B/l856~b16421482&FF=snature&4,,8,1,0/indexsort=-"http://catalog.nypl.org/search~S1?/snature/snature/snature/library.ndexsort=-"http://catalog.nypl.org/search~S1?/snature/snature/nature/nature/snat