Writing A Journal Article

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My current editorial position

(Eiji Matsuura, PhD)

• Autoimmunity Reviews	Editor
• Autoimmunity Highlights	Section Editor
• Clinical and Developmental Immunology	Associate Editor
• Journal of Autoimmunity	Editor
• Journal of Immunology Research	Associate Editor
• Journal of Cardiovascular Disease and Atherosclerosis	Editor
• The Open Autoimmunity Journal	Asian Regional Editor
• The Open Immunology Journal	Editor
• The Open Nutrition Journal	Editor

Content Outline

- Introduction
- What to include in journal articles?
- Before you write an article…
- Essential elements of journal article
- Tips for writing an article
- Submitting your article
- What happens after submission?
- Reviewers' Feedback

Introduction

- **The Purpose of Journal Article**
  - A form of 'sharing' of research outcome in the scientific community
  - Record maintenance for findings in a discipline
  - A narration of specific/novel contribution
- **Different Types of Articles**
  - Original Research Papers
  - Review Articles
  - Clinical Study Reports
  - Short Communication (perspective, opinion and commentary)

(Also have to consider the related patent right before!!!)

What to include in journal articles?

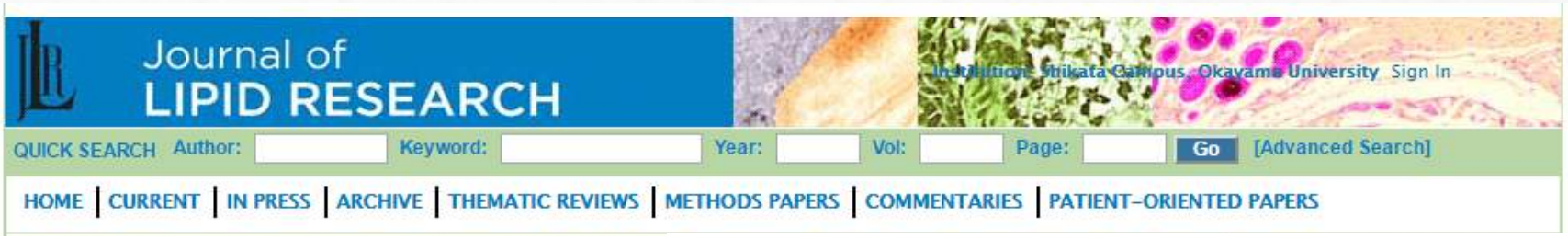
'Highlights' of Journal Articles:

- Problem Statement with concise yet comprehensive literature review
- Importance of addressing the problem
- Aim(s) of the study
- Study methods to address the problem
- Study results
- Implications of the study
- Recommendations

Before You Write An Article…

- **Targeted Journal Publisher**
  - Pre-assess the quality of own research for selection of publication medium
  - Analyze the targeted publisher:
    - Fields of focus (covered topics, purpose and mission)
    - Quality (Peer-reviewed? Impact factor?)
  - Impact factor → go from **HIGH** to **LOW**
- **Writing Associates**
  - Identify the contributors: co-authors
  - Group effort: discussion, writing together, work distribution (whichever applicable)

Information adopted from Journal of Lipid Research http://www.jlr.org/site/home/about/



About the *Journal of Lipid Research*

AIM AND SCOPE

The *Journal of Lipid Research* (JLR) focuses on the science of lipids in health and disease. The Journal emphasizes lipid function and the biochemical and genetic regulation of lipid metabolism. In addition, JLR publishes manuscripts on patient-oriented and epidemiological research relating to altered lipid metabolism, including modification of dietary lipids. The JLR aims to be on the forefront of the emerging areas of genomics, proteomics, metabolomics, and lipidomics as they relate to lipid metabolism and function.

The JLR covers biochemistry, cell biology, molecular biology, structural biology, genetics, genomics, immunology, metabolism, nutrition and clinical science as they relate to lipids. The following are representative areas covered in the Journal:

More about JLR

2015 Impact Factor: 4.368

Overview of submission and review process

Follow all instructions on his site exactly to avoid delay of the manuscript review process. The following is an overview:

1. Prepare manuscript text and tables in Microsoft Word. *See Preparing text and tables.*
2. Prepare publication-quality figures. *See Preparing figures.*
3. Combine text, tables and figures into a single PDF file (maximum size 5 MB). *See Preparing PDF for submission.*
4. Prepare any allowable supplemental data files. *See Preparing supplemental data.*
5. Prepare a cover letter. *See Cover letter.*
6. Submit the manuscript PDF, supplemental data files and cover letter at the submission site. *See Submission help.*
7. Reviewers will recommend whether the manuscript should be accepted, revised or declined. *See JLR's editorial policy.*
8. If you are asked to submit a revised manuscript for review, prepare and submit a revised manuscript. *See Resubmissions.*
9. If your manuscript is accepted for publication, it will be published as a Paper in Press within 24 hours of acceptance. You should upload the manuscript source files (but not the supplemental data) to the redactory office according to the instructions that will be given to you following acceptance.

Understand requirements, terms and conditions, and quality of targeted publisher~~

By ASBMB

Essential Elements of Journal Article

Applicable for original research articles

- Article Title
- Abstract
- Graphical Abstract (journal dependent/optional)
- Keywords
- Introduction
- Methodology
- Results and Discussions
- Conclusions
- Acknowledgement
- Authors' Declaration/Conflict of Interest
- References

Essential Elements of Journal Article

Article Title

"Be clear, concise yet specific"

Proposed Titles

1. Cat **(Too short!)**
2. A sleeping grey-striped cat **(relatively clear, concise and specific)**
3. A sleepy cat with an opened mouth, showing teeth, and has 8 pairs of whiskers that looks dead. **(This is such a grandma story, TOO LONG WINDED!)**

Essential Elements of Journal Article

Abstract

A concise summary of the article and construct by addressing:

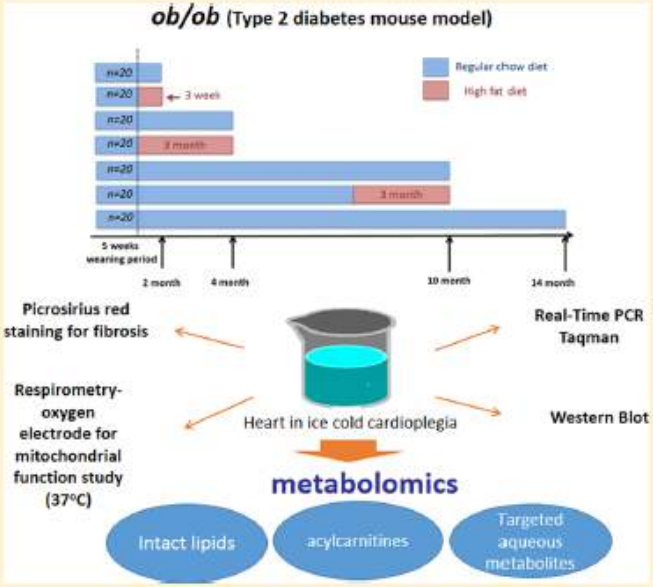
1. Research fields
2. Problem(s) and Aim(s)
3. Experimental approaches
4. Significant results
5. Outcomes

Essential Elements of Journal Article

Abstract

ABSTRACT: The ectopic deposition of fat is thought to lead to lipotoxicity and has been associated with mitochondrial dysfunction and diabetic cardiomyopathy. We have measured mitochondrial respiratory capacities in the hearts of *ob/ob* and wild-type mice on either a regular chow (RCD) or high-fat (HFD) diet across four age groups to investigate the impact of diet and age on mitochondrial function alongside a comprehensive strategy for metabolic profiling of the tissue. Myocardial mitochondrial dysfunction was only evident in *ob/ob* mice on RCD at 14 months, but it was detectable at 3 months on the HFD. Liquid chromatography–mass spectrometry (LC–MS) was used to study the profiles of acylcarnitines and the accumulation of triglycerides, but neither class of lipid was associated with mitochondrial dysfunction. However, a targeted LC–MS/MS analysis of markers of oxidative stress demonstrated increases in GSSG/GSH and 8-oxoguanine, in addition to the accumulation of diacylglycerols, which are lipid species linked to lipotoxicity. Our results demonstrate that myocardial mitochondria in *ob/ob* mice on RCD maintained a similar respiratory capacity to that of wild type until a late stage in aging. However, on a HFD, unlike wild-type mice, *ob/ob* mice failed to increase mitochondrial respiration, which may be associated with a complex I defect following increased oxidative damage.

KEYWORDS: *Respiratory capacity, high-fat diet, aging, metabolomics, obesity*



Wang et.al, *J. Proteome Res.*, **2015**, *14* (7), pp 2849–2862

Checklists

- Research fields
- Problem(s) and Aim(s)
- Methods
- Significant results
- Outcomes

Good

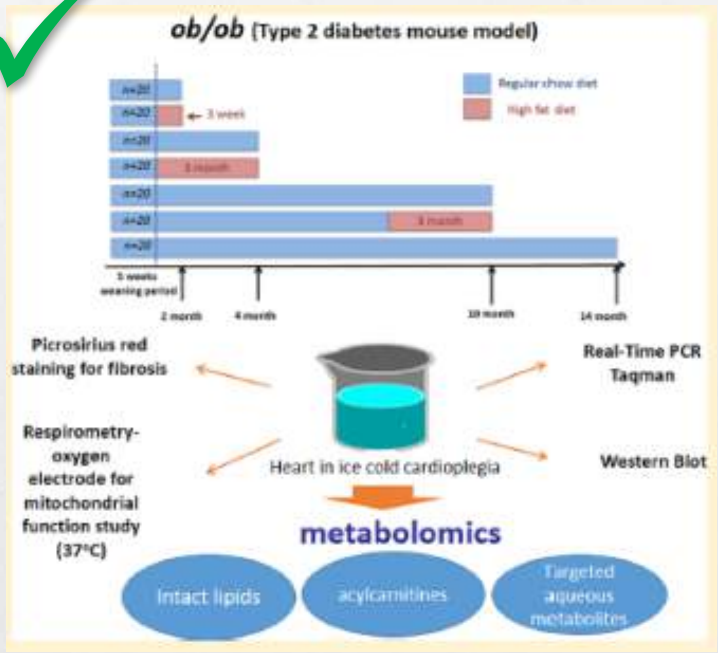
Or

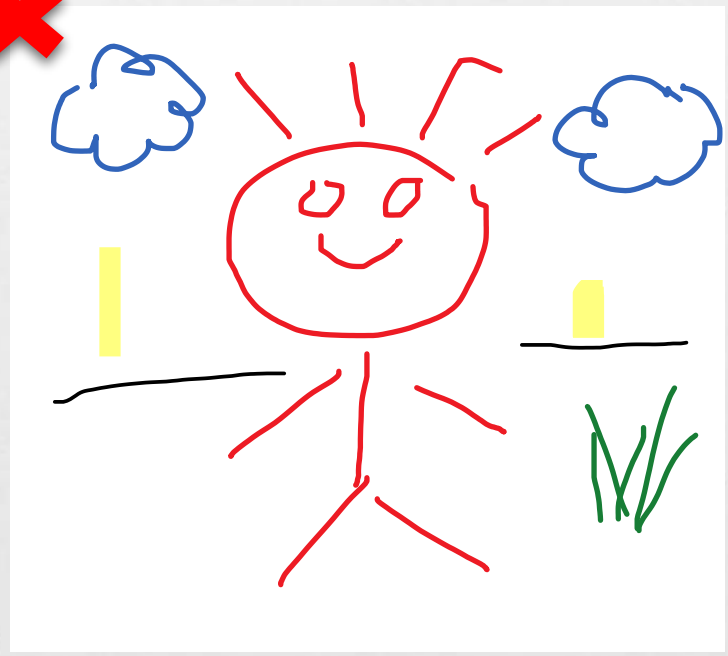
Bad

Essential Elements of Journal Article

Graphical Abstract

- Schematic representation of experimental approach
- Gives reader an idea of what is the article about





Essential Elements of Journal Article

Keywords

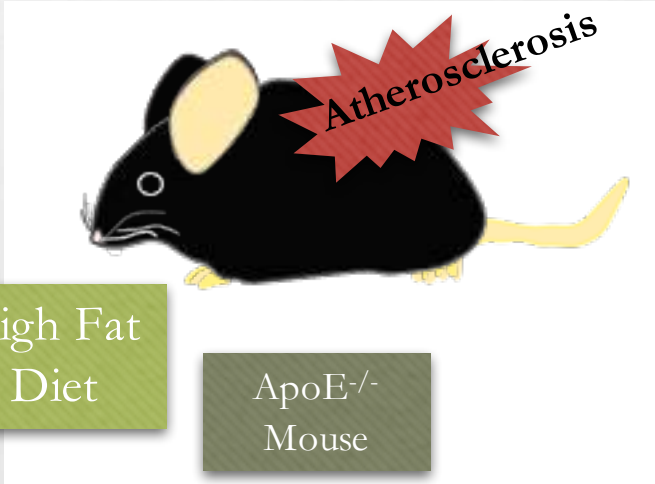
- Terminologies related significantly to the research that you intend to present (commonly 5 – 6 keywords)

✓ **High fat diet**

✓ **Atherosclerosis**

✓ **ApoE$^{-/-}$ mouse**

✓ **Cardiovascular disease**



✖ **Mickey mouse**

✖ **Long tail**

✖ **Minnie mouse's husband**

✖ **Snacks**

Essential Elements of Journal Article

Introduction

- Concise, comprehensive and relative background information of research, problem statement, and aims of the research
- Construct by addressing:
  - What is the background of the related research field?
  - Current research statements
  - Research aims and hypothesis

A Good Introduction…

Lipid accumulation has been proposed to be responsible for cardiac dysfunction and arises when lipid uptake exceeds lipid oxidation. It has been associated with the accumulation of reactive lipid intermediates such as saturated acyl-CoA species, long-chain acylcarnitine species, diacylglycerols, and ceramides, resulting in lipotoxicity.[13,14] In recent years, a hypothesis suggesting a direct link between intramyocardial lipid accumulation and mitochondrial dysfunction has emerged. In addition, mitochondria are the major site of reactive oxygen species (ROS) production and are susceptible to ROS-induced lipid peroxidation, which, in turn, damages mitochondrial machinery, particularly during fatty acid oxidation.[15]

The concept of investigating the complete cardiac metabolic phenotype using metabolic profiling has emerged as a promising approach for unravelling the complexities of cardiac metabolism.[16] For example, Kato and colleagues performed a comprehensive metabolomics study in a rat model of congestive heart failure and showed that the pentose phosphate pathway was activated.[17] Similarly, in the search for causal factors that explain lipid-induced metabolic dysfunction associated with insulin resistance, Koves and co-workers demonstrated a striking difference in acylcarnitine profiles of skeletal muscle upon high-fat feeding across all of the metabolites evaluated,[18] suggesting an important role of incomplete fatty acid oxidation in the development of insulin resistance. Increased myocardial long-chain acylcarnitines have been reported in the hearts of streptozotocin-injected type 1 diabetic animals,[19] but it is not clear whether these changes are causes or consequences of the diabetic heart.

In the present study, we have investigated whether obesity contributes to mitochondrial respiratory dysfunction in the heart, using metabolomics to investigate cardiac tissue from *ob/ob* mice across an aging study of the mouse. We chose to study the cardiac metabolic phenotype of the *ob/ob* mouse, as its metabolic status as a result of obesity is well-defined in the literature.[10,20−25] In addition, we have investigated the effect of an excess supply of lipids on cardiac mitochondrial metabolism in the heart and how this interacts with age. We hypothesized that an excess supply of lipids in the aging heart accelerates mitochondrial dysfunction. We demonstrate that high-fat feeding in the *ob/ob* mouse results in an impairment in mitochondrial function and fatty acid oxidation, and this arises, in part, through the generation of ROS.

- **Background**
- **Current Research Statement**
- **Problem Statement**
- **Aims, Objectives, Research Approaches**
- **In-text citation for research facts adopted from other sources (IMPORTANT)**

Wang et.al, *J. Proteome Res.*, **2015**, *14* (7), pp 2849–2862

Essential Elements of Journal Article

Methodology

- **Precise description** of research approaches inclusive of experimental set-up, chemicals, instrument used, summary of data processing method (statistics, a term, "Significant")
- **Cite methods** adopted from other researchers and describe modifications made (if applicable)

A Good Description…

Experimental Protocol

T-2 toxin was dissolved in 1 mL of dimethyl sulfoxide and diluted to required concentration in phosphate buffer saline (PBS). The four mice were housed to a cage and allowed to acclimatize 7 days prior to dosing. Twenty-four-hour LD50 (intraperitoneal (i.p.)) of T-2 toxin was determined by Gad and Weil's method [17]. To evaluate the dose-dependent effect of T-2 toxin on various toxicity parameters, mice were administered i.p. 1 LD50 dose (5.61 µg/kg body weight) and 2 LD50 dose (11.2 µg/kg body weight). Control mice received only PBS. This study has the approval of the institute's ethical committee on animal experimentation.

Chaudhari et.al, *J. Biochem Molecular Toxicology* **2009**, *23* (3), pp 212-221

Essential Elements of Journal Article

Results and Discussions

- Documentation of result data (representation of results in tables, graphs, charts or figures) – whichever applicable
- Present and describe **key results** in logical order
- Discuss results critically, **back-up result trend with research facts** and comparable result data from other research group
- Authors' **unbiased** inferences/own thoughts

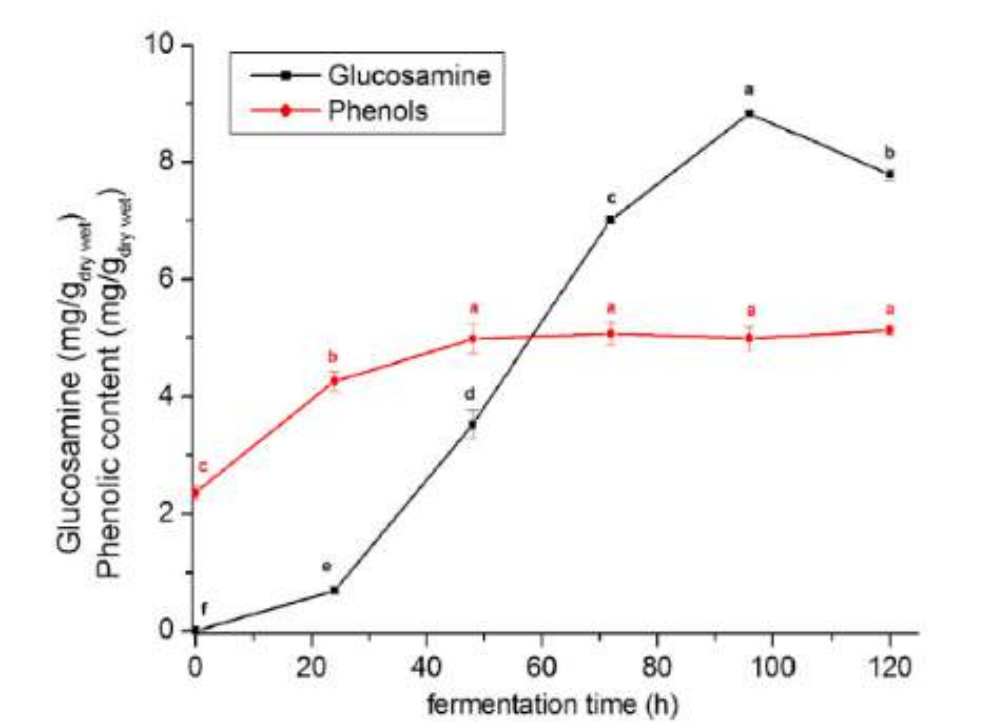


Fig. 1. Glucosamine and phenolic content during fermentation of rice bran. The point values in each line with the same superscript letter are not significantly different by Tukey test ($p < 0.05$).

Results and Discussions

1 Data Presentation

- **Proper labels for figure:**
  - Axes Titles
  - Axes ranges
  - Clear data points
  - Statistical significance
  - Data Legends
  - Figure number
  - Figure Description

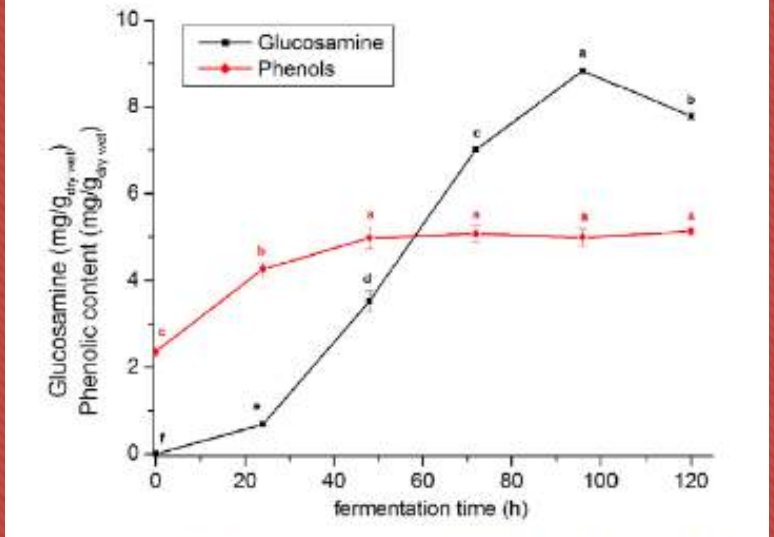


Fig. 1. Glucosamine and phenolic content during fermentation of rice bran. The point values in each line with the same superscript letter are not significantly different by Tukey test ($p < 0.05$).

Schmidt et.al, *Food Chemistry* **2014**, *146*, pp 371-377

After fermentation time of 48 h, there was not detected a significant increase in phenolic content, whereas the fungal biomass demonstrated an important increased until 96 h of fermentation (Fig. 1). The glucosamine, a constituent of chitin, an insoluble linear polymer composed of α-1,4 acetylglucosamine bonds, was determined to estimate the multiplication in fungal SSF (Schmidt & Furlong, 2012). At 96 h, 8.8 $mg_{glucosamine}/g$ were obtained from fermented biomass, showing that the *R. oryzae* fungus can grow using rice bran as a carbon source.

The phenolic compounds content at the beginning of fermentation was of about 2.4 mg/g and at the end of 120 h was of 5.1 mg/g, resulting in an increase of over 110% (Fig. 1).

Results and Discussions

2 Data Descriptions

- Explain key results
  - Highest result?
  - Lowest result?
  - Significant results?
- Refer data description with reference figure/table (eg. Figure 1 represents…)

Results and Discussions

3 Discuss your results…

"Rice phenolics include derivatives of benzoic and hydroxycinnamic acids, mainly ferulic acid and diferulates. These are commonly present in a chain form, and are normally components of complex structures such as hydrolyzable tannins and lignins, and linked to the cell wall structural components such as cellulose, lignin and proteins by ester linkages (Zhang et al., 2010). The more soluble phenolics are compartmentalised within the cell vacuoles, and they are in free or conjugated form, while the insoluble phenolics are connected to structures in the cell walls, esterified with arabinose or galactose residues of hemicellulose or pectic components (Mira, Massaretto, Pascual, & Marquez, 2009; Mira et al., 2008). There are two ways in which phenolic compounds can be formed; from the decomposition of the linkages between lignin, cellulose and hemicellulose or by producing a part of rice bran oil (Pourali et al., 2010). In the case of rice bran fermentation, the increased phenolic acids content is mainly caused by the cleavage of compounds complexed with lignin (Schmidt & Furlong, 2012). Filamentous fungi produce a range of enzymes required to break the lignin, and these microorganisms have two extracellular systems, one that produces carbohydrolisases and another ligninolytic oxidative system which degrades phenyl rings, increasing the free phenolic content (Martins et al., 2011; Sánchez, 2009)."

- Discuss results critically
  - Back up with research facts/compare data (if available) from other researchers

Essential Elements of Journal Article

Conclusion

- Recap the problem statement and key findings generally
- Keynotes to summarize the outcome of the research
- Significant contributions of the research
- Work limitations
- Further directions of the study

Do not give up!

挫折禁止

日曜・休日を除く

Eiji Matsuura, PhD, Okayama University Graduate School of Medicine, Dentistry, and Pharmaceutical Sciences

SLEEPY????

Image adopted from *blog.authorstream.com*

ONLY
Another
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to

Essential Elements of Journal Article

Conclusion

Take the following statement as an example:

Testing new product on animals

"Utilization of animals for testing of new products requires cautious planning and considerations to ensure animals' sufferings are minimal during the execution of the study. Nevertheless, animal testing remains vital and necessary for establishment and development of new lines of drugs and food products."

OR

Testing new product on animals is needed because I agree.

Essential Elements of Journal Article

Acknowledgement

- Giving credits to:
  - Funding bodies
  - People who assisted you in research/writing
  - Legislative/regulatory bodies for approval of the research project

TAKE NOTE:

- There isn't a need to include your parents, family, girlfriend, boyfriend, dog, cat, fish or tortoise.

You can always thank them by treating meals or present

Essential Elements of Journal Article

Authors' Declaration

- **MANDATORY!**
- To testify that all authors agreed upon the logistic and ethical matters related to the preparation and submission of article for publication
  - Agreement on order of authorship
  - Well informed of the content of the article and aware of the intention for submission of article for publication
  - No conflict of interest

Essential Elements of Journal Article

Authors' Declaration

- **Ethical Issue Related (IMPORTANT)**
  - Ethical clearance is required for animal- and human-related studies (animal and clinical studies)
  - Requires approval from institution or national regulatory bodies prior to execution of experimental plans.
  - Such declarations are **usually mentioned under "Materials and Methods" section**. Required information includes:
    - Name of organization in charge of approval of the ethic clearance.
    - Ethic clearance approval information (application number) - optional

Essential Elements of Journal Article

Authors' Declaration

- **Example to declare ethical issue related research**

Animal Studies

"All animal protocols were approved by the UK Home Office and the University of Cambridge and carried out by a license holder."

Wang et.al, *J. Proteome Res.*, **2015**, *14* (7), pp 2849–2862

Clinical Studies

"This study had been reviewed and approved by the Ethics Committee of Beijing Hospital. All studied individuals were informed in writing of the intended use of their samples and each provided written consent."

Yu et.al, *J. Chromatography B.*, **2014**, *960* (2014), pp 222–229

Essential Elements of Journal Article

References

- List of cited sources for research facts, information or supportive data written by other authors
- Use Citation Manager (eg. EndNote)
- Refer to journal site for **recommended referencing style*** (Harvard style, numbered style, etc…)

***Every journal publisher requires authors to prepare the reference/ citation of their respective articles with respect to the recommended referencing style/format. Failure to comply may end up as a rejection for your submitted paper!**

Tips for writing an article

1. **Make a strategic plan**
   - Know your research
   - Find a 'home' to showcase (journal publisher)
   - Shape your article to fit the targeted publisher
   - **BE MOTIVATED, write and get it PUBLISH!**
2. **Organize your writing**
   - Understand the aims and objectives of the targeted journal
   - Scan past published articles from targeted journal site for writing inspirations
   - Shape your article as per requirements by the targeted journal site
   - **Watch out for word limitations (if applicable)**

Tips for writing an article

3. **Outline and Write**
   - Make short notes for each essential elements of an journal article (abstract, introduction, methodology…)
   - Elaborate those outlined points!
   - Organize your writing into appropriate sections and sub-sections
   - Set a goal/timeline to motivate yourself in writing
4. **Get help from your co-workers**
   - Proof read your article
   - Receive critical comments and analyze
   - Polish up your article
   - Repeat!

Tips for writing an article

5. **Check to avoid PLAGIARISM!**
   - Paraphrase, cite and acknowledge information acquired from other authors' workpiece.
   - **DO NOT COPY WORD-TO-WORD BLINDLY and CITE!**

Tips for writing an article

PLAGIARISM Checking

Example

"Dietary fatty acids (FAs) are related to the development and progress of cardiovascular diseases (CVD)"

Yu et.al, *J. Chromatography B.*, **2014**, *960* (2014), pp 222–229

Which statement is on plagiarism ?

1. "The growth and advancement of cardiovascular diseases (CVD) have been closely associated with dietary fatty acids (FA) (Yu et. Al 2014)"

2. "The dietary fatty acids (FA) are related to the development and progress of cardiovascular diseases (CVD) (Yu et. Al 2014)"

ONLY
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to

Submitting Your Article…

Congratulation! You're halfway getting your research work published!

Journal publisher offers an online submission platform to submit your article for review

- Understand what are needed for the submission beforehand
- Prepare and upload your documents in accordance to the requirement
  - **BE MINDFUL** of the required file type, format, file sequence
  - Crucial factors to prevent instant rejection!

What Happens After Submission?

Upon submission, the editor of the targeted journal site will review your submission.

What is the fate of your submission?

- **Accepted**: The editor accepts your submission and your article will be subjected to critical review by professionals relevant to the research field of your article.
- **Rejected**: The editor does not accept your article for publication on their site. **DON'T GIVE UP AS YET**. Usually the rejection comes with reasons. Analyze those feedbacks, improve your manuscript and try other journal publisher!

Reviewers' Feedback

Now, you received feedbacks from reviewer. What do you do?

Non rejection feedback (Minor revisions/major revisions)

- Analyze their feedbacks thoroughly and discuss with others
- What do they want?
- Anything to amend, revise or clarify?
- Revise cautiously and resubmit
- Repeat the steps until the reviewers accept your article for publication!

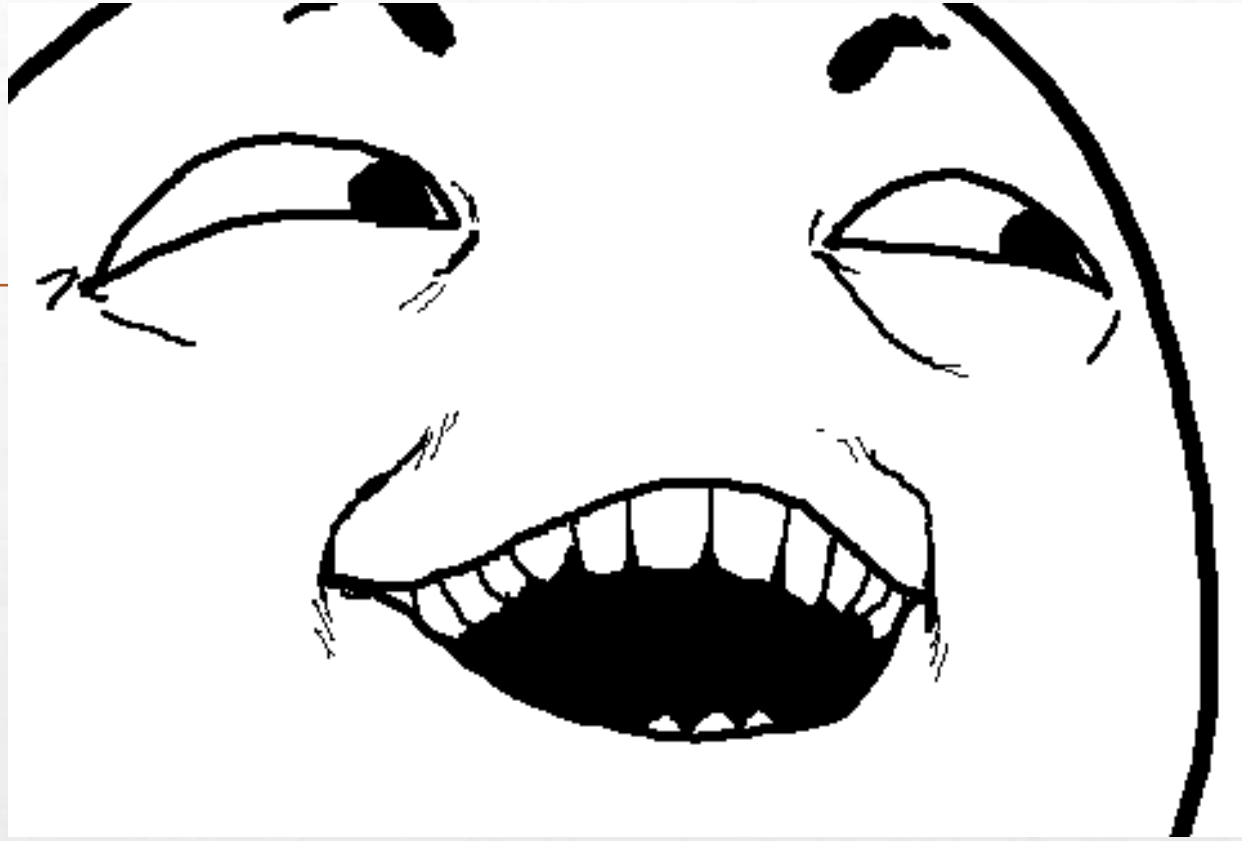
Rejection feedback (Rejected, Cannot be accepted for publication)

- Analyze the shortfalls of your paper
- Improve and try other publisher
- **DON'T JUST STOP HERE AND GIVE UP!**

Keynotes

Important points for writing an article

- Know your research
- Search and understand the targeted journal publisher
- Organize your writing
- Proof-read, revise and amend!
- Follow the dedicated submission rules
- Submit and wait for feedback
- Revise cautiously as per given feedback and resubmit (don't stop until you get it published)



Brace yourself, QUIZ TIME!

Image adopted from *dailymail.co.uk*

SELF REMINDER!

Patience is a virtue. Be patient, be motivated and don't surrender easily in getting your work published!

GOOD THINGS TAKE TIME!

THANK YOU