

How To Make A Scientific Poster

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Science students at all levels create scientific posters to show the results of their research. They display their posters at scientific gatherings so attendees can see what they've been working on and stop for more information only if they are interested in the student's work. A scientific poster must contain all the elements of a scientific paper in condensed form, and should be as professional in appearance as possible.

How do I get months and years of research onto my poster?

Your poster is a short story. Describe a few major points.


Including The Right Content

1) Title

It is your first chance to capture your audience

- ❖ **Create a short title.**
- ❖ Make sure to keep the length of the title as brief as possible without taking away crucial information.
- ❖ The title should be no longer than 2 lines.
- ❖ If you can, make your title "catchy" so it will attract interest from passersby, but don't try to make it funny.

2) Write An Introduction

- ❖ Keep your introduction to under 200 words so it can be read quickly.
 - ❖ Don't clutter your introduction with definitions, background information or anything else that will only bog down the narrative and cause passersby to lose interest.
 - ❖ Avoid using technical definitions unless absolutely necessary. The introduction section is here to introduce your issue, so be sure to not bore your readers right away with excessive information.
 - ❖ You can even include graphics if they will help the viewer understand the work that you have done.
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3) Describe Your Experimental Approach

- ❖ Briefly, describe your method, taking no more than 200 words and using illustrations if they're helpful. Flow charts are especially good for this section.
- ❖ Know your audience. Just as you would when you write a paper, make the information included on your poster will give the appropriate depth of information. It should be understandable even to a reader that is not specialized in the same particular field.
- ❖ In this section you will cover the materials and methods that you used in your research process. Feel free to include any images, charts, or graphs here that will help the viewer better understand your process. Also, don't forget to provide a rationale to explain why you chose these methods!

4) Give Your Results.

- ❖ Do this with 2 brief paragraphs of text and a clearly labeled table so passersby can understand your results at a glance.
- ❖ In the first paragraph, state whether your experiment worked or not. In the second paragraph, analyze your results in terms of your hypothesis.
- ❖ Most will skip the other sections and just study your results, so take extra care with this section.
- ❖ Charts and graphs are usually more effective than tables, but whatever you choose to use, make sure everything is labeled clearly.

5) Include Some Discussion Of Your Conclusions.

- ❖ In about 200 words, tell the reader why your research was important and relevant, both to the field of study and the real world.
- ❖ Remind the reader of your result and whether your initial hypothesis was supported.
- ❖ Try to convince your reader that your results are conclusive and interesting. . TIPS: Relate your results to other published research in the field.
- ❖ You can also suggest continuing research that would build upon your current study.

6) References

- ❖ Cite any journal articles you read that support your research or any research that is referenced in your study. Use the correct format prescribed for researchers in your field to note your sources.
- ❖ It is very important to follow the format required by the conference you are attending.
- ❖ It is common to shrink the font of the References section if it becomes overbearing and long.

7) Acknowledgments

- ❖ Thank everyone who assisted and supported you , such as other members of your research group or your funding source.
- ❖ Don't list the titles of people who supported you, but do list what specific assistance or support they provided.
- ❖ Keep this section as short as possible. Fewer than 40 words is best.

8) Give Your Contact Information.

- ❖ Provide your name, email address, website if you have one, and a place where readers can download a copy of your poster.
- ❖ You may want to create a handout-sized version of your poster with your information so your audience can go back to review your study later and can easily follow up with you at a later date.

Creating A Strong Presentation

1) Gather All Of Your Documents

- ❖ Gather all of the text and graphics in one place so that it is easy to transfer all of the content to wherever you need. For example, you might have an existing file you'd like to grab content from, or even your actual paper that may be a Word document.
- ❖ Try to avoid switching back and forth between a Mac and a PC. Generally speaking, this causes compatibility issues.

2) Determine The Size Of Your Poster.

- ❖ You can figure out the size you need by how much text in your report, the number of images or graphs you plan to include. If your report is under 5 pages and has less than 7 pictures or graphs a 36X48 should work. If your report has more information you can adjust your size accordingly.
- ❖ Check with any poster size requirements for your event. You may have space limitations for your display, and sometimes your poster size may be restricted.

- ❖ Chose Portrait or Landscape. Portrait orientation is when the poster is taller than it is wide, whereas landscape is the opposite. It is wider than it is tall.



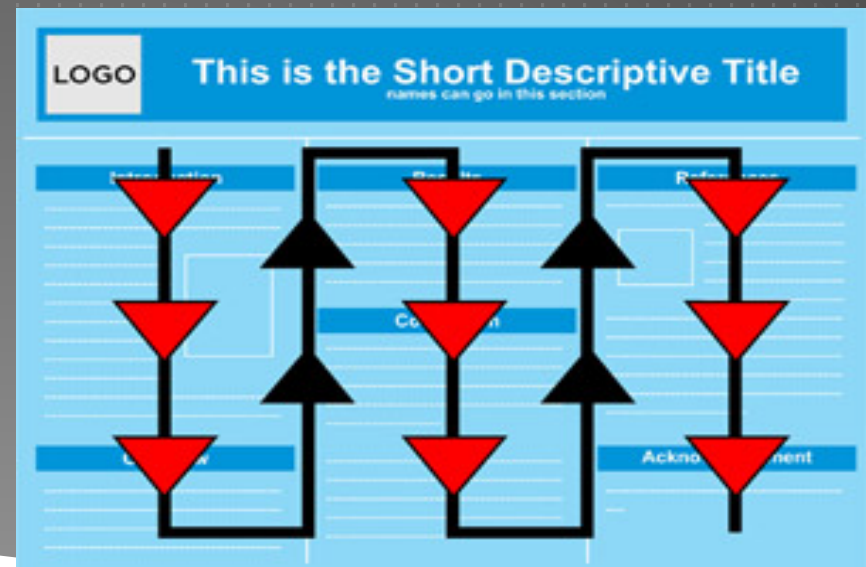
2) Planning Your Content

Many students try to include everything in their research paper, but this is a serious mistake. Posters that have too much text on them will be passed over in favor of those that are easier to read. On average, a viewer will spend 5-7 minutes looking at your poster presentation. So, before you start gathering and sorting through images, graphs, and charts, take a step back and ask yourself the following question:

"If a viewer was only able to take away one thing from looking at my poster, what would that one thing be?"

- ❖ Carefully select what to put on your poster.
- ❖ Use columns to organize and structure your presentation in a logical manner.
- ❖ Avoid excessive text. (Poster should have roughly 20% text, 40% figures, 40% space)


- ❖ Clearly label any sections, graphs or images.
- ❖ Leave breathing space around your text
- ❖ Your poster presentation should follow a path that leads anyone reading from section to section. A reader should start in the upper left corner of the poster presentation and work their way to the bottom of the poster then left to right adding new columns as they need them



3) Font

Your poster title should be readable from 10 feet away. Text and figures should be legible from around 5-7 feet away or roughly 1.5m to 2m. So we suggest the font size for the major sections of the poster as follows:

- ❖ Title: 85pt
- ❖ Authors: 56pt
- ❖ Sub-headings: 36pt
- ❖ Body text: 24pt
- ❖ Captions: 18pt

- ❖ It is important to try to avoid using more than 2 font types because too many fonts distract the viewer.
 - ❖ Do not use a different font type to highlight important points - otherwise the fluency and flow of your sentence can appear disrupted.
 - ❖ Do not use all UPPER CASE type in your posters. It can make the material difficult to read.
 - ❖ Use the bold face or *italics* or combinations to emphasize words and phrases.
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4) Color, Contrast and Images

- ❖ When choosing colors for your poster, using 2-3 colors will give the best look. Too many colors make it look unprofessional, but having no color makes it boring and plain.
- ❖ If you are creating images on the computer, note that colors may appear different on your screen due to differences in monitors and the printing process. Blue text on a black background and vice versa is particularly hard to read. Even though there may seem to be enough contrast on screen, it does not print well. Try using a light grey instead of black, or lighter blue in the place of navy.
- ❖ Don't settle for poor-quality images. Go to the trouble of finding image files that will still look sharp when blown up to place on your photo. You may have to take your own digital photos.

5) Pick A Software Program

- ❖ PowerPoint

It is OK , easy to use but the colors will fool you and inflexible.

- ❖ Adobe Illustrator or InDesign

It is Excellent, more difficult to learn, but what you see is what you get.

- ❖ Others: Canvas, Publish-It, Microsoft word, Corel Draw, LaTeX, etc.

- ❖ Once you've created all your sections and illustrations, transfer the files to portable document format (PDF) so you can be certain how they will look when printed.

- ❖ Use either PC or Mac platform for everything so you don't run into compatibility problems when moving files between the two.

6) Be Ready

- ❖ Bring any additional reference materials you may need.

You should be prepared to answer any questions with all your available information.

- ❖ Be sure you have adequate supplies to display your poster.
- ❖ Store your poster safely.

Use a container, or consider rolling the poster up.

- ❖ Make a "Back in 5 Minutes" sign that can hang next to your poster.

It's a good idea to have a sign on hand in case you need to step away. This can help reduce the chance you miss any interested visitors.

Examples

Example: A good scientific poster (MedEdMentoring, 2011)

Hypnotherapy in Late-Onset Feline Paranoia

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OBJECTIVE

To investigate the efficacy of hypnotherapy for paranoia in geriatric feline populations.

BACKGROUND

Late-onset feline paranoia (FP) commonly emerges in *Felis catus* (domesticated house cats) at age 11 years, but can reportedly occur in felines as young as age 7 years. Due to common stereotypes concerning the species' eccentricity, FP is often mistaken for normal behavior by veterinarians and pet psychiatrists alike. Recent studies show a link between *Nepeta cataria* (catnip) abuse in the feline's early years and the increase of frontal-lobe activity (believed to cause the paranoia) in the later years.



Signs of FP:

- Suspicion of domestic environment
- Aggressive behavior (scratching, litter box issues, defacement of furniture)
- Belief owners are "out to get them"
- Catgrass' delusion (owner has been replaced by an impostor)
- Fear of being held/recipient of excessive attention
 - Leads to isolation, safe from human handling (closet, bathtub, under sink)
- "Magic-cat" thinking
 - Excessive staring
 - Constant meowing (attempt at mind manipulation)

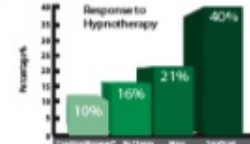
METHOD

In this work, a sample of 98 elderly *F. catus* with moderate to severe paranoia were evaluated to ensure the presence of late-onset paranoia. Owners confirmed that paranoid behavior was nondebatable or absent during the feline's early years. Further confirmation was obtained by the Sylvester Rating Scale for Feline Personality Disorders (SRSPD), with a specific focus on: somatic symptoms (frequent ear twitches, tail flicking, gastrointestinal dysfunction), insomnia, agitation, and weight-loss.

Hypnotic Technique



RESULTS



Results
Unable to come out of hypnotic state. The subject suffered loss of identity (did not recognize owner's face, brought large animal and so on).

CONCLUSION

Results suggest that hypnotherapy may be a useful intervention in late-onset feline paranoia, resulting in improved outcomes in feline behavior and domestic environment. Future studies may examine the use of hypnosis over a more extended period-of-time to examine further improvements in thought/behavioric, and may also explore alternative ways to induce hypnotic states as the *N. cataria*/hypnotic pattern has shown harmful effects in a small percent of the population.

ACKNOWLEDGEMENTS

Thank you to the National Association of Geriatric Pet Psychiatrists, who provided funding for this project.



References:
Graham, R. The Crazy Feline. In: *Journal of Behavior Analysis and Therapy* 1981; 14(4): 265-270.
Graham, R. Hypnotherapy in the Aging Feline Patient. In: *The Feline*, 2007; 1(2): 27-30.

This assessment was to measure how much an individual likes to have new experiences (neophilia). Iain Walker and Keith Gibbins found that people who scored high on the Neophilia Scale preferred to concentrate on the "big picture" in life. It is believed that people with higher scores on this scale are more likely to find their lives meaningful and satisfying, and that being open to new experiences is critical to giving one's life purpose. Low scores prefer specific details rather than the big picture and are more likely to make "errors of exclusion." Low scores are motivated to avoid new information that might threaten their preconceived beliefs. Compared to low scores, high scores are more accepting of social change, have more unorthodox tastes, are more interested in making personal changes, and are more willing to take risks in order to have new experiences.

Source: Iain Walker, "The Psychologist's Book of Personality Tests" John Wiley & Sons, 2005

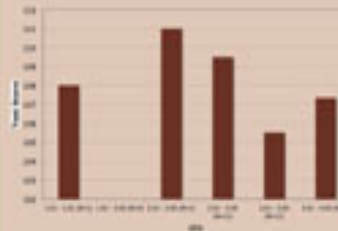
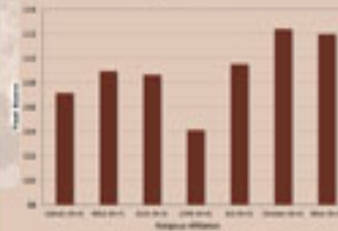
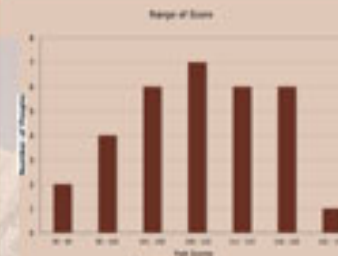
"Believe me! The secret of reaping the greatest fruitfulness and the greatest enjoyment from life is to live dangerously!"
Friedrich Nietzsche

Scales/Findings

This was the scale used by Iain Walker and Keith Gibbins in determining scores, which can be used in comparison with our FY 205 assessment.

| Men | Women | Percentage |
|-----|-------|------------|
| 140 | 134 | 85 |
| 133 | 127 | 70 |
| 121 | 119 | 56 |

Range of Scores



One limitation of this assessment was that certain questions were exclusive. For example, most the assessment did not take into consideration the fact that certain individuals may have religious beliefs at a higher standard of morals. For example, "Question 14: Current sexual mores are too permissive", and "Question 16: Most people ought to experiment with "mind altering" drugs." These particular questions seem to not take into the account that there could be a person with high religious or higher morals that is also truly enjoy new experiences.

Another limitation of this assessment is that we were only able to examine the 18-20 year old age segment, and that there is a greater portion of Lutherans on this college campus as opposed to other college campuses.

To improve a particular score for this assessment, it is suggested that individuals must have a greater sense of exploration and perhaps to occasionally seek out new experiences.

Calculations

Range
Scores results ranged from 94-127, a difference of 33 points from the maximum and minimum scores. The average score from the results was 108.3.

GPA
Out of the 5 highest scores, all have a GPA between 2.50 and 3.00. However, out of the five lowest scores, four people have a G.P.A. of 3.1 or higher.

Gender
Out of the five highest scores, three of the participants were male. Seventy-percent of males scored 110 or higher, where as only 35% of females scored 110 or higher.

Religious Affiliation
From the five highest scores, three of the participants were not of Lutheran religious affiliation, while the 5 lowest scores are all of Lutheran religious affiliation.

Cereal Bars Containing SAEF[®], A Novel Superhydrating Fiber, Exhibit Significantly Greater Satiety-Enhancing Properties than Cereal Bars Containing Glucomannan in Simulated Stomach Model

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INTRODUCTION

Overweight and obesity are becoming major health problems worldwide (1). The prevalence of obesity is increasing rapidly and is expected to continue to rise significantly over the next few decades (2). Obesity is a major risk factor for cardiovascular disease, type 2 diabetes mellitus, and other chronic diseases (3). Satiety is the feeling of fullness or satisfaction that results from eating and drinking, and it is a key component of energy balance (4). Satiety is a complex phenomenon that involves both physiological and psychological factors (5). Satiety is a subjective experience that is influenced by a number of factors, including the amount and composition of food intake, the rate of gastric emptying, and the release of satiety hormones (6). Satiety is a key component of energy balance and is a major determinant of body weight (7). Satiety is a complex phenomenon that involves both physiological and psychological factors (5). Satiety is a subjective experience that is influenced by a number of factors, including the amount and composition of food intake, the rate of gastric emptying, and the release of satiety hormones (6). Satiety is a key component of energy balance and is a major determinant of body weight (7).

OBJECTIVE

The goal of this study was to assess the impact of SAEF on satiety in a simulated stomach model.

MATERIALS

Cereal bars containing either 0% SAEF (SAEF-0) or 10% SAEF (SAEF-10) were used.

METHODS

The effect of SAEF on satiety was assessed in a simulated stomach model. The model consisted of a gastric chamber and a duodenal chamber. The gastric chamber was filled with a simulated gastric juice containing either SAEF-0 or SAEF-10. The duodenal chamber was filled with a simulated duodenal juice. The model was incubated at 37°C for 2 hours. The amount of SAEF-10 that was released from the gastric chamber into the duodenal chamber was measured. The amount of SAEF-10 that was released from the gastric chamber into the duodenal chamber was significantly higher than the amount of SAEF-0 that was released from the gastric chamber into the duodenal chamber.

RESULTS

SAEF-10 significantly increased satiety compared to SAEF-0. The amount of SAEF-10 that was released from the gastric chamber into the duodenal chamber was significantly higher than the amount of SAEF-0 that was released from the gastric chamber into the duodenal chamber.

CONCLUSION

SAEF-10 significantly increased satiety compared to SAEF-0. The amount of SAEF-10 that was released from the gastric chamber into the duodenal chamber was significantly higher than the amount of SAEF-0 that was released from the gastric chamber into the duodenal chamber.

REFERENCES

1. World Health Organization. Obesity: preventing and managing the global epidemic. Geneva: WHO, 2000.
2. World Health Organization. Global status report on non-communicable diseases 2014. Geneva: WHO, 2014.
3. World Health Organization. Non-communicable diseases: a global public health priority. Geneva: WHO, 2011.
4. Rolls BT. Satiety: how it works and how to use it. In: Rolls BT, ed. Satiety: how it works and how to use it. New York: Springer, 2009: 1-15.
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6. Rolls BT. Satiety: how it works and how to use it. In: Rolls BT, ed. Satiety: how it works and how to use it. New York: Springer, 2009: 1-15.
7. Rolls BT. Satiety: how it works and how to use it. In: Rolls BT, ed. Satiety: how it works and how to use it. New York: Springer, 2009: 1-15.

"Cereal bars containing SAEF[®] have better textural properties and significantly greater elasticity and viscosity after digestion than the other tested cereal bars. These two properties are known to enhance satiety."



Table 1.

| Cereal Bar | Volume (mL) | Viscosity (cP) |
|-------------------|-------------|----------------|
| Control | ~100 mL | ~100 cP |
| SAEF [®] | ~150 mL | ~150 cP |

Statistical significance: ** p < 0.01 (vs. control).



requirements.

- Weight loss over time.
- Loss of muscle mass.
- Loss of fat mass.
- Fluid accumulation.
- Measurable diminished grip strength.

Often associated with general physical wasting.

- Usually linked to chronic disease.

Individuals with malnutrition may be underweight, normal weight, overweight, or obese.

The Social-Ecological Model

A theory-based framework for understanding interactive effects of personal and environmental factors that determine health behaviors.

Helps identify social and organizational leverage points for health promotion within organizations.



Level 3: Organizational

Establish systematic malnutrition screening and intervention models and standards

Opportunities

- Integrate malnutrition screening and intervention into electronic health record templates either in all healthcare professionals.
- Define clinicians' roles to include malnutrition screening and intervention.
- Use nutrition support teams for comprehensive, coordinated malnutrition care.
- Include malnutrition counseling in patient discharge plans, as appropriate.

Resources

- Centers for Medicare and Medicaid Services
 - RUC and evidence malnutrition approach in a comprehensive condition and generally eligible for higher reimbursement.
 - Registered dietitian-nutritionists have become privileged in hospitals to independently order patient diets.
- Alliance to Advance Evidence-Based Nutrition: malnutrition advisory effort to fight malnutrition, resources include online toolkit and easy-to-use Malnutrition Screening Tool.
- Adult Malnutrition Health Institute: CMS audits on malnutrition and aging population.

Level 4: Community

Engage independent organizations, local jurisdictions, and states

Opportunities

- Incorporate malnutrition screening and intervention in state healthcare quality initiatives and care models, especially those related to healthcare acquired conditions and malnutrition.
- Implement a malnutrition-related quality measure set in public and private accountability programs, including Value-Based Purchasing, Medicare Shared Savings, Medicare Advantage, and shared quality programs for acute and post-acute care.
- Develop a malnutrition care model approval program for healthcare systems.
- Include malnutrition screening and intervention in hospital licensure requirements and hospital rating and accreditation measures.
- Support The Joint Commission standard on malnutrition screening to include malnutrition intervention.

Resources

- Resolutions on malnutrition introduced by the National Black Caucus of State Legislators and in the states of Indiana, Illinois, Kentucky, and Ohio that can serve as models for other states.
- Malnutrition Awareness Week resolutions introduced in the states of Florida, Georgia, Louisiana, and Texas.
- Malnutrition Quality Improvement Initiative dialogue event held in 2014 by Advance Health and the Academy of Nutrition and Dietetics.
- Additional resources include The Joint Commission and the Academy of Nutrition and Dietetics.

Level 5: Policy

Make malnutrition screening and intervention a policy priority

Level 2: Interpersonal

Build routine nutrition screening and malnutrition intervention skills into healthcare professionals' training, education, and practice

Opportunities

- Integrate routine nutrition screening and intervention in standards of care for older adults.
- Evaluate malnutrition as a key health indicator and trigger for older adults.
- Enhance training and continuing education regarding assessment on nutritional status and interventions for malnutrition.
- Establish competencies in nutrition education for healthcare professionals.
- Increase nutrition content in professional licensing and certification exams.
- Foster training to improve interactions between healthcare providers and older patients.
 - Support advancement for preventive health services targeting nutrition and physical activity.

Resources

- Taking What You (Don't) Know: A Clinician's Handbook from the National Institute on Aging.
- National Board of Physician Nutrition Specialists educational materials, credentialing programs, faculty, and other resources to improve physicians' nutrition literacy.

Level 1: Individual

Educate families, patients, and caregivers about malnutrition

Opportunities

- Launch nationally malnutrition prevention campaigns.
- Establish a Malnutrition Awareness Day or Week.
- Host malnutrition education programs at health departments and other local venues.

Resources

- Administration on Aging/Elderly Nutrition Program: strategies for malnutrition needs, nutrition screening/assessments, nutrition education.
- Malnutrition: nutrition for seniors dietary information.
- AARP Foundation: Older Adult Hunger program to help provide food security.
- USDA Nutrition for Older Adults: online resources to educate older adults on meal planning, shopping, budgeting.
- Academy of Nutrition and Dietetics: online support to find a registered dietitian/nutritionist for nutrition counseling.
- Conflict Response—EOP Senior Hunger campaign to help older adults/caregivers identify malnutrition and hunger.
- Families and Work Institute: online Employee Older Care Toolkit on nutrition.



Conclusion

Remember, your poster is trying to tell a story. The research poster explains to anyone reading it what you did, how and why you did it, and the conclusion you came to from doing it. Images and graphs say much more than words

- ❖ Keep it simple
- ❖ Effective
- ❖ clear

References

- ❖ <http://www.wikihow.com/Make-a-Scientific-Poster>
- ❖ <http://www.makesigns.com/tutorials/scientific-poster-parts.aspx>