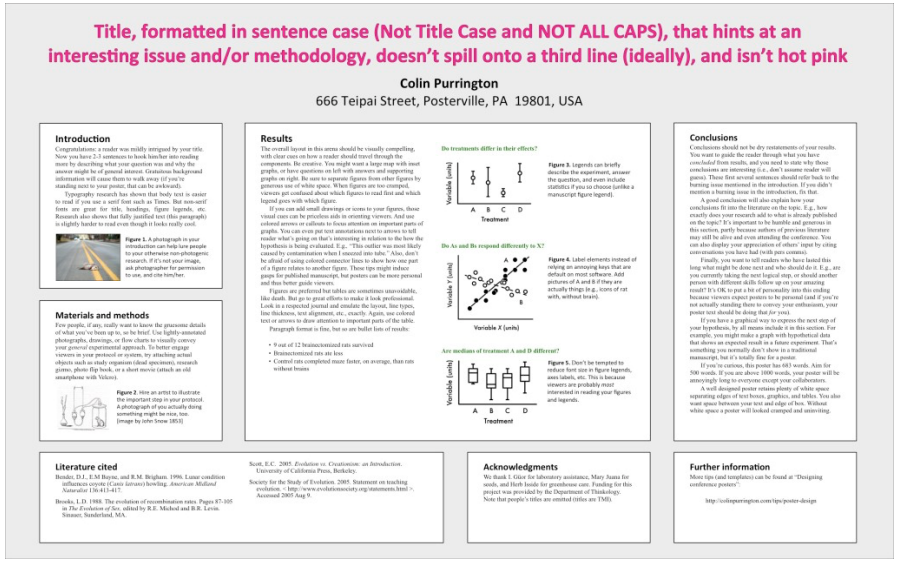
# Research Poster Guide

# What is a poster?

A scientific poster is a visual presentation of scientific research in a standard form, with heading, name of researcher, name of research institute, text, tables and illustrations displaying the results of the research.



# Overview

- The scientific poster is an excellent way of presenting a researcher’s work.
- It necessitates a brief and fluent formulation, setting out all the stages of the research in a condensed, clear and interesting form.
- The process requires thought and planning on selection of information and on design.
- It is a hands-on experience involving creative activity, teamwork and division of roles.

# Great Poster Elements

- Easy to read/follow

If your poster is clear and concise, an individual should be able to read it in less than 10 minutes

- Attracts viewer’s attention

- Communicates results of investigation

# Sections of a research poster

- Title
- Introduction
- Materials and methods
- Results
- Conclusions
- Acknowledgments
- Further information

# Title

- 2 lines or less
- 85pt. Type
- legible at 25 feet
- Clear, concise, direct

# Introduction

- 200 words or less (Average 150 words)
- Define the issue
- Establish the purpose of your work
- Justify your experimental approach
- Provide a clear hypothesis

# Materials and methods

- Approximately 200 words
- Use figures and tables to illustrate experimental design
- Use flowcharts to summarize timing of events
- Include photograph or labeled drawing
- Outline statistical plan

# Results

- Approximately 200 words
- Provide qualitative/descriptive results
- Present analyses that specifically address the hypothesis
- Refer to charts or images

# Conclusion

- Approximately two sentences
- Concise summary
  Reminds viewer of relevance

# References

- Approximately 5-10 citations
- Standard format

# Acknowledgement

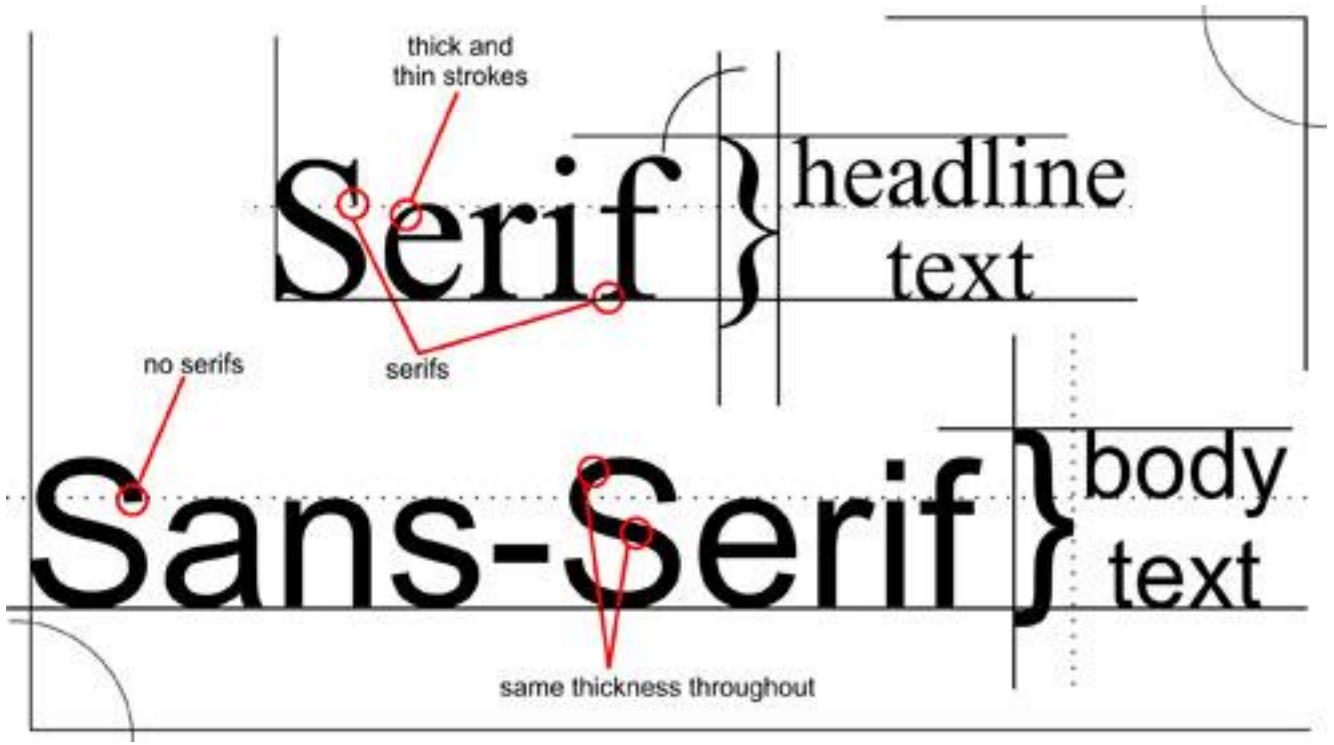

- Assistance and financial support

# Recommended font sizes

- **T**itle: 85pt minimum
- **N**ames of authors and their organisations: 56pt minimum
- **S**ub-headings: 36pt minimum
- Body text: 24pt minimum
- Captions: 18pt minimum

# Fonts

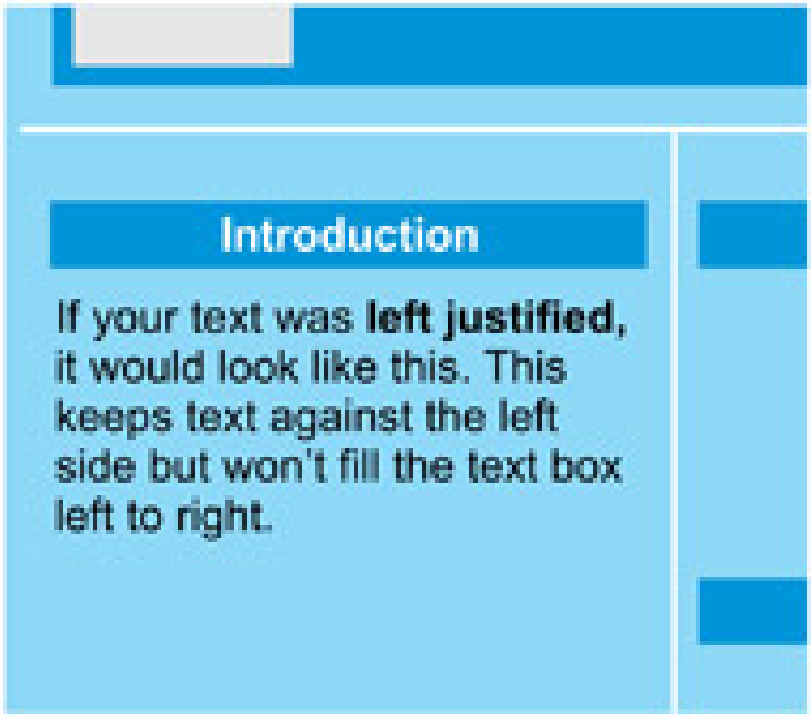
- Use sans serif fonts: these fonts are more legible than serif fonts from a distance.



# Fonts (cont.)

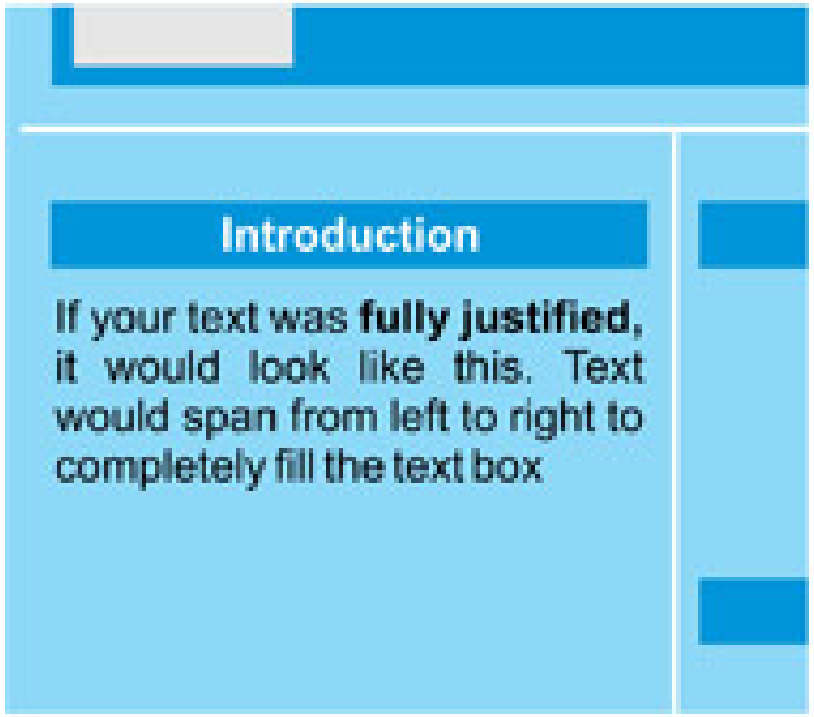
- Avoid excessive text. (Poster should have roughly 20% text, 40% figures, 40% space)
- Text and figures should be legible from around 5-7 feet away (or roughly 1.5m to 2m)
- Leave breathing space around your text.
- Do not use a different font type to highlight important points - otherwise the fluency 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.
- Left-align text. Using fully justified text will create large gaps between some words and make it difficult to read.

## Left Justified




VS

## Fully Justified



# Font combinations

- Two common fonts that are easy on the eyes are Arial and Verdana.
- It is important to try to avoid using more than 2 font types because too many fonts distract the viewer. This is especially true when they appear on the same sentence.

Helvetica / Garamond
Caslon / Univers
Futura / Bodoni
Garamond / Futura
Gills Sans / Caslon
Minion / Gill Sans
Myriad / Minion
Caslon / Franklin Gothic
Trade Gothic / Clarendon
Franklin Gothic / Baskerville

# Color Suggestions

- When choosing colors for your poster, using 2-3 colors will give the best look. Too many colors make it look chaotic and unprofessional, but having no color makes it boring and plain.
- The background and text should have a high contrast. To ensure this, use a light color for the background with a dark colored text or a darker background with light text.

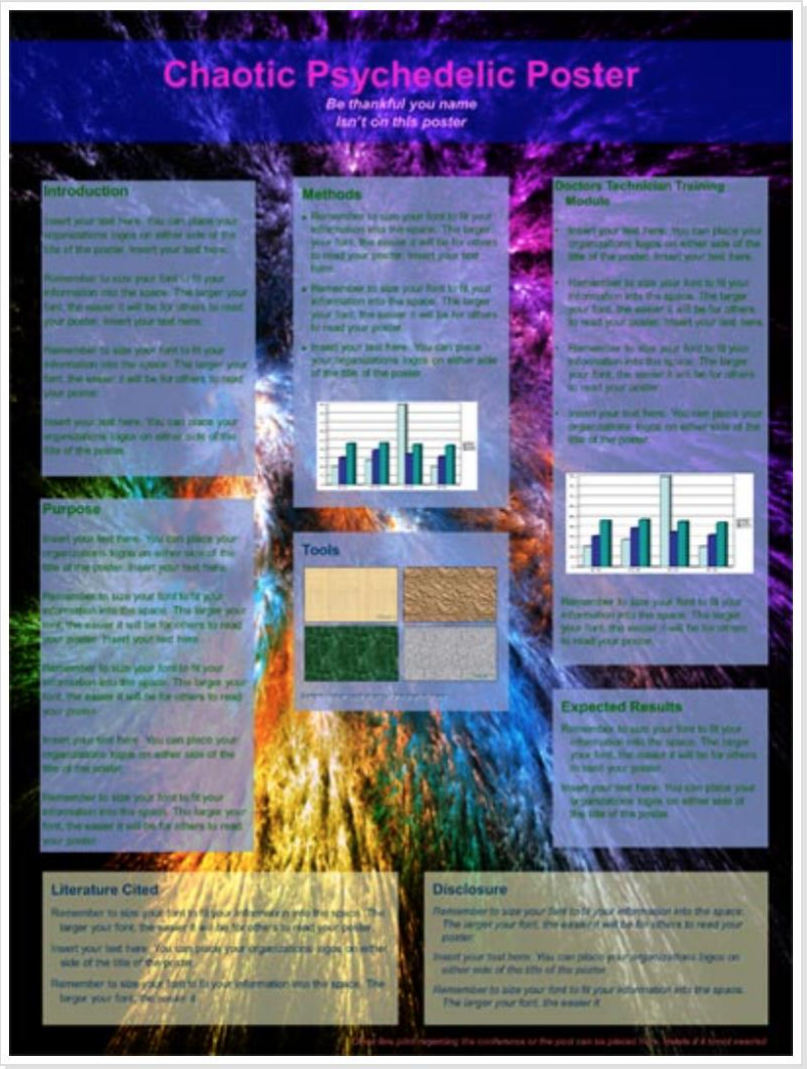
# Color Suggestions (cont.)

**Here Is A Bad Example Of Contrast In A Scientific Poster:**

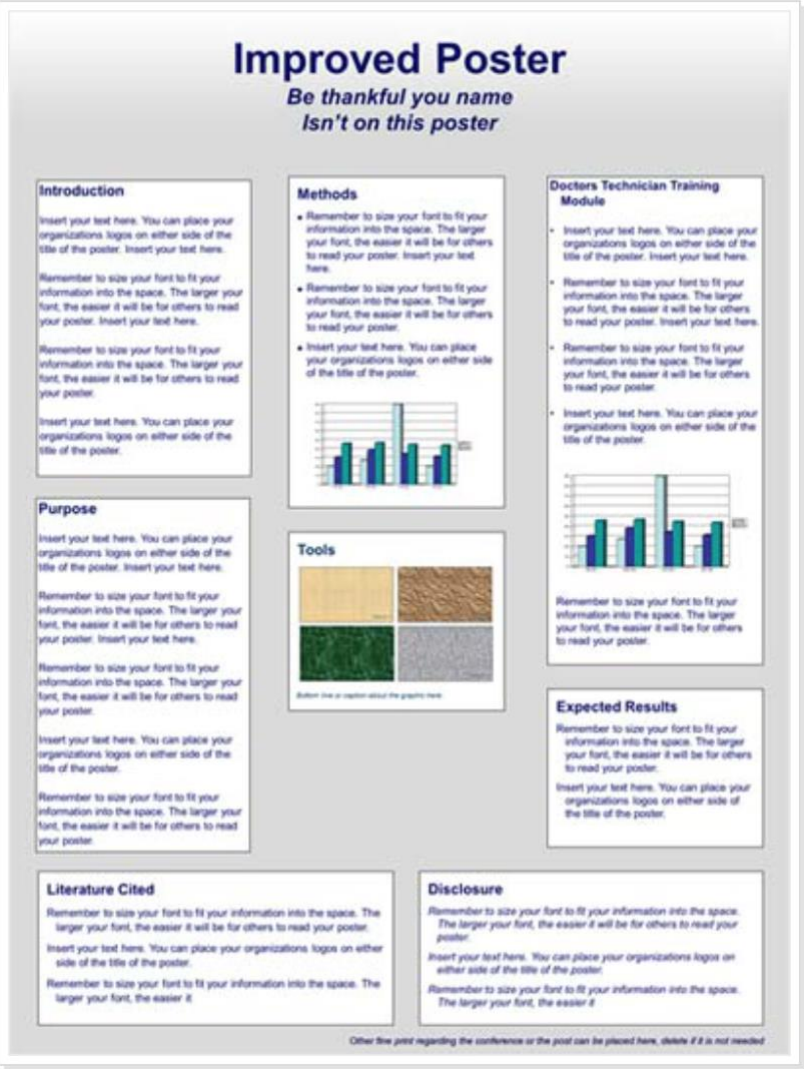
**Now, A Good Example Of Contrast In A Scientific Poster:**

# Background

**The Background Below Can Make The Text Hard To Read:**




**This Is A Good Example For A Scientific Poster Background:**



Logo

# Title of the Research Study

Logo


## PEOPLE WHO DID THE STUDY

***UNIVERSITIES AND/OR HOSPITALS THEY ARE AFFILIATED WITH***


## Introduction

We hope you find this template useful! This one is set up to yield a 48x36" (4x3') Tri-Fold horizontal poster.

We've put in the headings we usually see in these posters, you can copy and paste and change to your heart's content! We suggest you use black text against a light background so that it is easy to read. Background color can be changed in the design tab, background drop down menu.

The boxes around the text will automatically fit the text you type, and if you click on the text box, you can use the little handles that appear to stretch or squeeze the text boxes to whatever size you want. If you need just a little more room for your type, change the line spacing to a multiple of .90 or even .85 in home >paragraph >line spacing. The type in your poster's text boxes should be at least 24 point.

The dotted lines through the center of the piece will not print, they are for alignment. You can move them around by clicking and holding them, and a little box will tell you where they are on the page. Use them to get your pictures or text boxes aligned together.

You can add a guideline by holding the control key down as you move one. It can also help to turn on Snap to Guides by right clicking the background and going to Grid and Guides. That will make images and text boxes "magnetically" snap to the guidelines.

**How to bring things in from Excel® and Word®**

**Excel-** select the chart, then copy (ctl+C), and paste (ctl+V) into PowerPoint®. The chart can then be stretched to fit or edited as required. ***Watch out*** for scientific symbols used in imported charts, which PowerPoint will not recognize as a used font and may print improperly if we don't have the font installed on our system. It is best to use the Symbol font for scientific characters, we always have that installed.

**Word-** select the text to be brought into PowerPoint, copy, then paste the text into a new or existing text block. This text is editable. You can change the size, color, etc. in home >font. We suggest you not put shadows on smaller text. Stick with Arial and Times New Roman fonts so your collaborators will have them.

**Tables** that come in funny can often be fixed by doing paste >special >enhanced metafile.

**Photos**

We need images to be 72 to 100 dpi in their final size, a rough rule of thumb that a 500 kb jpg (2 megapixel) image file can go up to 12x16" on your poster. Do insert >from file to import them.

**Preview:** To see your in poster in actual size, go to view-zoom-100%. It's really important to walk through your poster viewing it at full size to be sure it's going to look OK.

**Feedback:** If you have comments about how this template worked for you, email to sales@megaprint.com. We listen! Call us at 800-590-7850 if we can help in any way.

## Methods

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# Common Medical Diagnoses Associated with Chronic Low Back Pain

Jennifer Lai, Todd Thames MD, Sandra Burge PhD
The University of Texas Health Science Center at San Antonio

## INTRODUCTION

Chronic low back pain (CLBP) has become an increasingly prevalent complaint in family medicine practices that is not only difficult to treat but also extremely costly to patients. This problem can have harmful effects on various aspects of patients' social, mental and physical well-being. There are also consequences on society as a whole as CLBP is a leading cause of long-term disability and workers' compensation. [1]

Past research has found significant associations between low back pain and lifestyle factors such as obesity and physical functioning. [2] Findings have also shown that obesity rates are steadily increasing and stimulating more cases of metabolic syndrome. [3] Low back pain is thus related to obesity, which causes more health problems. However, there have not been studies investigating the relationships between specific medical diagnoses and back pain. An objective of this project is to determine if pain is commonly found in conjunction with metabolic syndrome. The aim of this analysis is to analyze correlations between pain and comorbidities including hypertension, diabetes, and hyperlipidemia.

## MATERIAL and METHODS

*Subjects.* Investigators conducted this study in outpatient clinics of six family medicine residency programs across Texas. Patients were invited to participate if they were adults with low back pain for 3 months or longer, and were not new to the clinic. Investigators excluded pregnant women and patients with cancer.

*Procedure.* Medical students enrolled and surveyed 222 patients as they arrived for routine visits to the outpatient family medicine clinics. When the visit was complete, students retrieved their medical records and abstracted additional information related to low back pain.

*Measurement.* The 5-page patient survey addressed demographic characteristics, pain duration, frequency and severity, physical functioning and general health, anxiety, depression, social support and stress, and family violence. From the charts, students gathered information about the duration of the doctor-patient relationship, the patient's health insurance, the cause and duration of the low back pain, treatments for pain, comorbidities, and BMI.

*Analysis.* In this analysis, the key outcome variables were average pain and total body pain. Total body pain is measured by combining average pain with its effect on normal daily work.[4] Predictor variables included BMI as well as diagnoses including diabetes, hypertension, and hyperlipidemia.

## RESULTS

The average age of all participants in the study was 52.9±13.5 years old with mostly females (66.5%) of White or Caucasian background (45.3%). Hispanics (37.4%) were the next largest ethnic group followed by African-Americans (15.9%) and Asian (0.5%). Students completed chart reviews on 179 of the 220 subjects. The most common diagnoses found were hyperlipidemia, hypertension, diabetes and obesity (Figure 1).

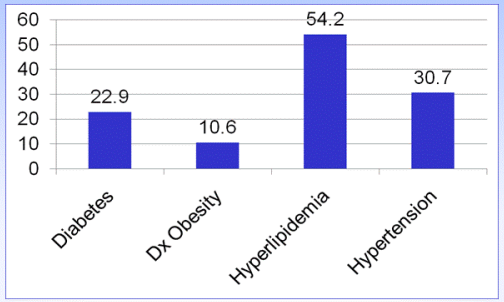



*Figure 1. Most common diagnoses found in chart reviews for 179 patients*

| **Outcome: Body Pain** | | |
|---|---|---|
| Predictors | Beta | p-value |
| African-American | β = +.174 | p = .023 |
| Diabetes | β = -.147 | p = .057 |
| Hypertension | β = +.128 | p = .096 |
| Depression/Anxiety | β = +.327 | p = .000 |

*Table 1. Significant predictors of body pain*

| **Outcome: Physical Functioning** | | |
|---|---|---|
| Predictors | Beta | p-value |
| Age | β = -.257 | p = .001 |
| BMI | β = -.169 | p = .019 |
| Hyperlipidemia | β = +.124 | p = .091 |
| Average Pain | β = -.463 | p = .000 |

*Table 2. Significant predictors of physical functioning*

## RESULTS

Based on linear regression analysis, strong predictors of body pain were African-American background, absence of diabetes, and presence of hypertension and depression or anxiety (Table 1). Hyperlipidemia was a predictor and correlated positively with physical functioning while age, BMI and average pain were negatively correlated (Table 2)..

## CONCLUSIONS

- African-American patients diagnosed with hypertension, depression or anxiety and without diabetes experienced more body pain. These results are consistent with past studies, which found that psychological risk factors such as anxiety contribute to the development of chronic back pain. [5] Thus, common medical diagnoses as well as mental status should be utilized when evaluating and treating chronic pain.

- Poorer physical functioning was associated with older patients who had higher BMIs, more average pain but normal lipid levels. Overweight and obese people feel more pain causing them to have less physical function, which in turn may contribute to more low back pain.

- Patients diagnosed with more health problems had higher BMIs and increased body pain. Obesity may be contributing both to chronic disease and to pain. This combination may only serve to reinforce sedentary lifestyle, making management of pain and disease more difficult.

- These findings can help physicians to better understand interactions and associations between individual diagnoses. Patients should be examined as a whole since all health problems influence each other.

## REFERENCES

1. Badley EM, Rasooly I, Webster GK. Relative importance of musculoskeletal disorders as a cause of chronic health problems, disability, and health care utilization. J Rheumatol 1994;21(3):505-14.
2. Mattila R, Malmivaara A, Kastarinen M, et al. The effects of lifestyle intervention for hypertension on low back pain. Spine 2007;32:2943-2947.
3. Ceska R. Clinical implications of the metabolic syndrome. Diab Vasc Dis Res. 2007;4:S2-4.
4. Stewart AL, et al. The MOS Short-Form General Health Survey: reliability and validity in a functional health status. J Clin Epidemiol 1989;42(3):217-229.
5. Linton SJ. A review of psychological risk factors in back and neck pain. *Spine*. 2000;25:1148–1156.

## ACKNOWLEDGEMENTS

*This study was conducted in the Residency Research Network of Texas (RRNeT) with support from the Texas Academy of Family Physicians Foundation, the Office of the UTHSCSA Medical School Dean, and the South Texas Area Health Education Centers.*

# Text sizes:

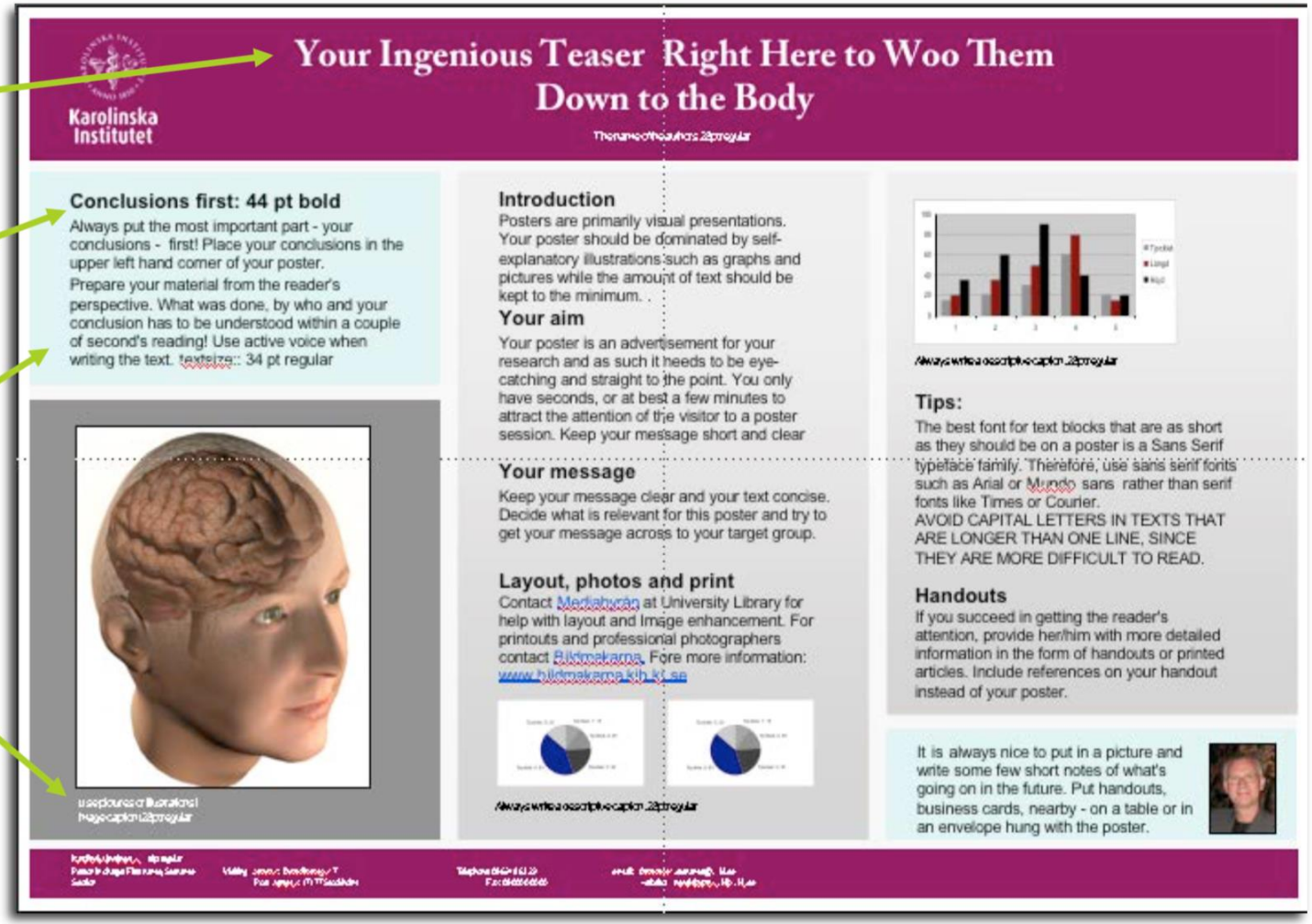
Title: 85 point

Authors: 56pt

Sub-headings: 36pt

Body text: 24pt

Captions: 18pt



# Cryptogenic Stroke in the Presence of an Atrial Myxoma

Hamed Abbaszadegan, MD; Jeremy Payne, MD, PhD
Banner Good Samaritan Medical Center Department of Internal Medicine; Phoenix, AZ

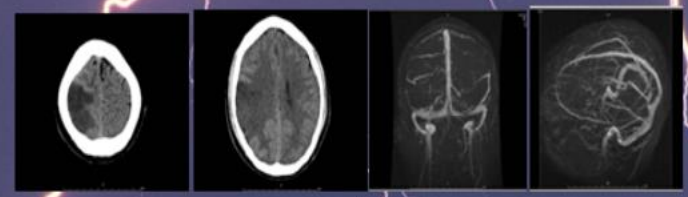
## Introduction:

Strokes are often thought of as an occurrence in patients with risk factors such as long-standing hypertension, hypercholesterolemia, diabetes mellitus, "older" age, smoking, and genetic factors to name a few. It is not as common to see strokes in the younger age population (less than 40 years old), especially in the absence of cardiac/brain anomalies, right to left shunting, trauma, or endocarditis. When stroke occurs in this age group, the work up is often exhaustive to exclude clotting disorders, autoimmune conditions, and structural defects.

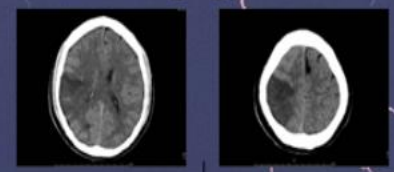
## Case Report:

The patient is a 32 year old African American male with no known PMH who presented to the hospital with sudden onset of mild headache, left-sided weakness, and left spatial neglect. During the patient's admission, it was determined that he had an acute right parietal lobe ischemic infarct. Extensive work up did not find a definitive cause, but a right atrial myxoma was incidentally found. There was no clearly visualized patent foramen ovale, however a bubble study suggested a small degree of right to left shunting. No vascular anomaly on MRA imaging was found. Extensive lab work up which included coagulation studies, comprehensive drug screening, cultures, autoimmune etiologies, and lipid studies was unremarkable. The patient was discharged to acute rehab with a potentially cryptogenic stroke. Follow up is to include a repeat transesophageal echo to confirm the myxoma is still present which would then require surgical evaluation for excision.

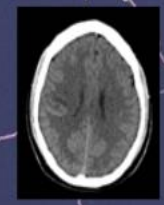
## Initial CT & MRA



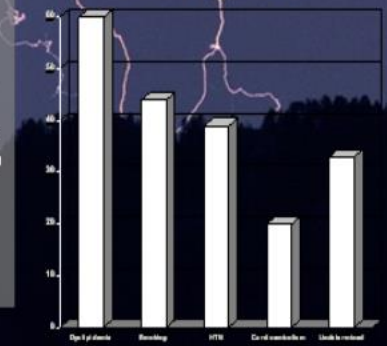
## 2nd CT



## 3rd CT, Day 9



## Risk Factors for Ischemic Stroke Age 15-49



## Transesophageal Echocardiogram

## Discussion:

Often co-morbid disease, drug use, smoking, and other high risk activities can predispose patients to pro-thrombotic events. This was not the case in our patient. Etiologies to rule out before tagging a patient with a "cryptogenic" title should include: structural anomalies of the brain (CT + MR imaging), lipid profile, coagulation studies (factor V leiden mutation, anti-thrombin III, lupus anticoagulant, cardiolipin, prothrombogenic gene mutations, homocysteine), infectious etiologies, and auto-immune etiologies (Anti-nuclear antibody, rheumatoid factor). An embolic particle no larger than 1mm is sufficient to cause a clinically significant stroke. Despite no definitive R→L shunt, it is not impossible to imagine a small piece of the myxoma dislodging from an unseen small shunt.

- Annual Stroke rate for ages 15-49 = 10.8/100,000

References:
1. Kizer, Jorge. Evaluation of the Patient with Unexplained Stroke. *Coronary Artery Disease*. 2008; 19(7): 535-40.
2. Putaala, J, Metso, A, Metso, T, et. al. Analysis of 1008 Consecutive Patients Aged 15 to 49 With First-Ever Ischemic Stroke. *Stroke*. 2009; 40;1195-1203.

# Poster Size

| Size | Height x Width (cm) | Height x Width (inches) |
|---|---|---|
| A0 | 118.9 x 84.1 cm | 46.8 x 33.1 in |
| A1 | 84.1 x 59.4 cm | 33.1 x 23.4 in |
| A2 | 59.4 x 42.0 cm | 23.4 x 16.5 in |
| A3 | 42.0 x 29.7 cm | 16.5 x 11.7 in |
| A4 | 29.7 x 21.0 cm | 11.7 x 8. |

# A good poster ….

- Is well researched, well structured and well presented
- Conveys your question or research clearly and concisely
- Is eye-catching
- Is not cluttered
- Easy to navigate with an obvious sequence
- Utilizes good design and effective use of color
- Has a good balance of text and graphics
- Makes good use of visuals to convey key messages
- Can be read in 5 minutes from 5 feet away (main headings from 12 feet)