

Design and Professional Practice 2

Poster Preparation

Dr Ian Radcliffe



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Aims and Objectives

The aim of this session is to provide you with a basic understanding of posters and their content.



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Intended Learning Outcomes

- Understand the purpose of a poster.
- Be able to construct a technical poster using the technology available to you.
- Appreciate what happens after the printing is done.



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What is the purpose of a poster?

- Convey ideas
- Reveal findings
- Sell a product
- Attract passers-by to stop and speak to you
- Encourage viewers to contact you



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More than just a big bit of paper



The Poster

- Static
- Visual
- Conveys the key information

The Presenter

- Dynamic
- Answers questions
- Provides additional information
- Proof of work



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Planning

- Audience
- Your content
 - Key message
 - What is important
- Your space
 - A0, A1, A2?
 - Portrait or Landscape



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The Message

- Coherent – what's the storyline?
- Concise – no waffle
- Relevant – only present results that illustrate the main findings
- Accurate – check spelling and grammar
- Consistent – maintain style
- Readable – figure sizes, caption locations, fonts, colours



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Scientific Posters

- Title - meaningful, but not complicated
- Authors & affiliations - list who did the work
- Introduction - motivation and background
- Methods - describe what you did, briefly
- Results - provide data, use figures
- Conclusion (& Future work):
 - State key result, whether this was expected
 - Link to the bigger picture
- References
- Acknowledgements:
 - Funding, equipment, advice, assistance, etc



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Design Posters



- Title - meaningful, but not complicated
- Authors & affiliations - list who did the work
- Introduction - motivation and background
- Requirement Spec. - criteria for success
- Final design - What you created
- Evaluation - Results of assessment
- Conclusion (& Future work):
 - State key result and link to the bigger picture
- References
- Acknowledgements:
 - Funding, equipment, advice, assistance, etc.





PIGS IN SPACE: EFFECT OF ZERO GRAVITY AND AD LIBITUM FEEDING ON WEIGHT GAIN IN CAVIA PORCELLUS

Colin B. Purrington

6673 College Avenue, Swarthmore, PA 19081 USA

Bad Example

THE HIGH FRUCTOSE
SUGAR ASSOCIATION

SPACE EXES

ABSTRACT:

One ignored benefit of space travel is a potential elimination of obesity, a chronic problem for a growing majority in many parts of the world. In theory, when an individual is in a condition of zero gravity, weight is eliminated. Indeed, in space one could conceivably follow ad libitum feeding and never even gain an gram, and the only side effect would be the need to upgrade one's stretchy pants ("exercise pants"). But because many diet schemes start as very good theories only to be found to be rather harmful, we tested our predictions with a long-term experiment in a colony of Guinea pigs (*Cavia porcellus*) maintained on the International Space Station. Individuals were housed separately and given unlimited amounts of high-calorie food pellets. Fresh fruits and vegetables were not available in space so were not offered. Every 30 days, each Guinea pig was weighed. After 5 years, we found that individuals, on average, weighed nothing. In addition to weighing nothing no weight appeared to be gained over the duration of the protocol. If space continues to be gravity-free, and we believe that assumption is sound, we believe that sending the overweight — and those at risk for overweight — to space would be a lasting cure.



INTRODUCTION:

The current obesity epidemic started in the early 1960s with the invention and proliferation of elastane and related stretchy fibers, which released wearers from the rigid constraints of clothes and permitted monthly weight gain without the need to buy new outfits. Indeed, exercises today for hundreds of million people involve only the act of wearing stretchy pants in public, presumably because the constrictive pressure forces fat molecules to adopt a more compact tertiary structure (Xavier 1966).

Luckily, at the same time that fabrics became stretchy, the race to the moon between the United States and Russia yielded a useful fact: gravity in outer space is minimal to nonexistent. When gravity is zero, objects cease to have weight. Indeed, early astronauts and cosmonauts had to secure themselves to their ships with seat belts and sticky boots. The potential application to weight loss was noted immediately, but at the time travel to space was prohibitively expensive and thus the issue was not seriously pursued. Now, however, multiple companies are developing cheap extra-orbital travel options for normal consumers, and potential travelers are also creating new ways to pay for products and services that they cannot actually afford. Together, these factors open the possibility that moving to space could cure overweight syndrome quickly and permanently for a large number of humans.

We studied this potential by following weight gain in Guinea pigs, known on Earth as fond of ad libitum feeding. Guinea pigs were long envisioned to be the "Guinea pigs" of space research, too, so they seemed like the obvious choice. Studies on humans are of course desirable, but we feel this current study will be critical in acquiring the attention of granting agencies.

MATERIALS AND METHODS:

One hundred male and one hundred female Guinea pigs (*Cavia porcellus*) were transported to the International Space Laboratory in 2010. Each pig was housed separately and deprived of exercise wheels and fresh fruits and vegetables for 48 months. Each month, pigs were individually weighed by duct-taping them to an electronic balance sensitive to 0.0001 grams. Back on Earth, an identical cohort was similarly maintained and weighed. Data was analyzed by statistics.

RESULTS:

Mean weight of pigs in space was 0.0000 ± 0.0002 g. Some individuals weighed less than zero, some more, but these variations were due to reaction to the duct tape, we believe, which caused them to be alarmed and push briefly against the force plate in the balance. Individuals on the Earth, the control cohort, gained about 240 g/month ($p = 0.0002$). Males and females gained a similar amount of weight on Earth (no main effect of sex), and size at any point during the study was related to starting size (which was used as a covariate in the ANCOVA). Both Earth and space pigs developed substantial dewlaps (double chins) and were lethargic at the conclusion of the study.

CONCLUSIONS:

Our view that weight and weight gain would be zero in space was confirmed. Although we have not replicated this experiment on larger animals or primates, we are confident that our result would be mirrored in other model organisms. We are currently in the process of obtaining necessary human trial permissions, and should have our planned experiment initiated within 80 years, pending expedited review by local and Federal IRBs.

ACKNOWLEDGEMENTS:

I am grateful for generous support from the National Research Foundation, Black Hole Diet Plans, and the High Fructose Sugar Association. Transport flights were funded by SPACE-EXES, the consortium of wives divorced from insanely wealthy space-flight startups. I am also grateful for comments on early drafts by Mañana Athletic Club, Corpus Christi, USA. Finally, sincere thanks to the Cuy Foundation for generously donating animal care after the conclusion of the study.

LITERATURE CITED:

NASA. 1982. Project STS-XX: Guinea Pigs. Leaked internal memo.
Sekulić, S.R., D. D. Lukač, and N. M. Naumović. 2005. The Fetus Cannot Exercise Like An Astronaut: Gravity Loading Is Necessary For The Physiological Development During Second Half Of Pregnancy. Medical Hypotheses. 64:221-228
Xavier, M. 1965. Elastane Purchases Accelerate Weight Gain In Case-control Study. Journal of Obesity. 2:23-40.



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NRF

BLACK
HOLE
DIET PLANS

PIGS IN SPACE: EFFECT OF ZERO GRAVITY AND AD LIBITUM FEEDING ON WEIGHT GAIN IN CAVIA PORCELLANUS

Colin B. Purrington

6673 College Avenue, Swarthmore, PA 19081 USA

Bad Example

THE HIGH PROULSE
GUINEA ASSOCIATION

ABSTRACT

One ignored benefit of obesity is the elimination of obesity-related health problems. In many parts of the world, obesity is a condition that is being eliminated. Indeed, in space, the effects of ad libitum feeding and zero gravity on weight gain only side effect would be the need to upgrade one's stretchy pants ("exercise pants"). But because many diet schemes start as very good intentions only to be found to be rather harmful in the long term, we have decided to test the effects of ad libitum feeding on Cavia porcellaneus (Guinea pigs). Individuals were housed separately and fed ad libitum amounts of high-calorie food (chocolate, cheese, and vegetables) and low-calorie food (celery, carrots, and apples). Every 30 days, each Guinea pig was weighed. After 5 years, we found that individuals, on average, weighed nothing. In addition to weighing nothing, weight appeared to be gained over the course of the protocol. If space continues to be gravity-free, we believe that assumption is sound, we believe that the overweight — and those at risk for overweight in space would be a lasting cure.

INTRODUCTION

The current obesity epidemic started in the late 19th century, when the release of related stretchy fibers, which released the need to buy new outerwear, led to the wearing of stretchy pants in public. This led to more compact tertiary structures. Unfortunately, at the same time that fabrics became stretchy, the race to the moon between the United States and Russia yielded a useful fact: gravity in outer space is minimal to nonexistent. When gravity is zero, objects cease to have weight. Indeed, early astronauts and cosmonauts had to secure themselves to their ships with seat belts and sticky boots. The potential application to weight gain in space is obvious: if gravity is zero, weight is zero. This is a prohibitively expensive and thus the issue was not pursued. However, recent developments in space travel options for cargo and passenger transport, and the services that these options provide, have opened the door to a cure over the long term. This study was designed to follow weight gain in Guinea pigs, known on Earth as fond of ad libitum feeding, to be the "Guinea pigs" of space research, too, so they seemed like the obvious choice. Studies on humans are of course desirable, but we feel this current study will be critical in acquiring the attention of granting agencies.

CONCLUSIONS

Our view that weight and weight gain would be zero in space was confirmed by our results. We are confident that our result would be mirrored in other model organisms. We are currently in the process of obtaining necessary human trial permissions, and should have our Guinea pig treatment started within 80 years, pending expedited review by local and Federal IRBs.

ACKNOWLEDGEMENTS

This research was funded by the National Science Foundation, Black Hole Diet Plans, and Transport flights were funded by SPACE-EXPS, the consortium of wealthy space-flight supporters. I am also grateful for comments on early drafts by Marfana Athletic Club, Corpus Christi, USA. Finally, sincere thanks to the Cuy Foundation for generously donating animal care after the conclusion of the study.

Title – hard to read and doesn't tell you much

Colours – too many and too loud

Too much text

Background is distracting

Layout is messy

Structure is inconsistent

Results data would be better shown as a graph



Pointless image

LITERATURE CITED

NASA. 1982. Project STS-XX: Guinea Pigs. Leaked internal memo.
Sekulić, S.R., D. D. Lukač, and N. M. Naumović. 2005. The Fetus Cannot Exercise Like An Astronaut: Gravity Loading Is Necessary For The Physiological Development During Second Half Of Pregnancy. Medical Hypotheses. 64:221-228.
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PIGS IN SPACE: EFFECT OF ZERO GRAVITY AD LIBITUM FEEDING ON WEIGHT GAIN IN CAVIA PORCELLUS

Colin B. Purrington

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THE HIGH FRUCTOSE
SUGAR ASSOCIATION

SPACE-EXES

ABSTRACT:

One ignored benefit of space travel is a potential elimination of obesity, a chronic problem for a growing majority in many parts of the world. In theory, when an individual is in a condition of zero gravity, weight is eliminated. Indeed, in space one could conceivably follow ad libitum feeding and never even gain an gram, and the only side effect would be the need to upgrade one's stretchy pants ("exercise pants"). But because many diet schemes start as very good theories only to be found to be rather harmful, we tested our predictions with a long-term experiment in a colony of Guinea pigs (*Cavia porcellus*) maintained on the International Space Station. Individuals were housed separately and given unlimited amounts of high-calorie food pellets. Fresh fruits and vegetables were not available in space so were not offered. Every 30 days, each Guinea pig was weighed. After 5 years, we found that individuals, on average, weighed nothing. In addition to weighing nothing no weight appeared to be gained over the duration of the protocol. If space continues to be gravity-free, and we believe that assumption is sound, we believe that sending the overweight — and those at risk for overweight — to space would be a lasting cure.

INTRODUCTION:

The current obesity epidemic started in the early 1960s with the invention and proliferation of elastane and related stretchy fibers, which released wearers from the rigid constraints of clothes and permitted monthly weight gain without the need to buy new outfits. Indeed, exercises today for hundreds of million people involve only the act of wearing stretchy pants in public, presumably because the constrictive pressure forces fat molecules to adopt a more compact tertiary structure (Xavier 1966).

Luckily, at the same time that fabrics became stretchy, the race to the moon between the United States and Russia yielded a useful fact: gravity in outer space is minimal to nonexistent. When gravity is zero, objects cease to have weight. Indeed, early astronauts and cosmonauts had to secure themselves to their ships with seat belts and sticky boots. The potential application to weight loss was noted immediately, but at the time travel to space was prohibitively expensive and thus the issue was not seriously pursued. Now, however, multiple companies are developing cheap extra-orbital travel options for normal consumers, and potential travelers are also creating new ways to pay for products and services that they cannot actually afford. Together, these factors open the possibility that moving to space could cure overweight syndrome quickly and permanently for a large number of humans.

We studied this potential by following weight gain in Guinea pigs flown on Earth as fond of old habits as humans. Guinea pigs were long envisioned as the obvious choice. Studies on humans are difficult to conduct and require acquiring the attention of granting agencies.

MATERIALS AND METHODS:

One hundred male and one hundred female Guinea pigs (*Cavia porcellus*) were transported to the International Space Laboratory in 2010. Each pig was housed separately and deprived of exercise wheels and fresh fruits and vegetables for 48 months. Each month, pigs were individually weighed by duct-taping them to an electronic balance sensitive to 0.0001 grams. Back on Earth, an identical cohort was similarly maintained and weighed. Data was analyzed by statistics.

RESULTS:

Mean weight of pigs in space was 0.0000 ± 0.0002 g. Some individuals weighed less than zero, some more, but these variations were due to reaction to the duct tape, we believe, which caused them to be alarmed push briefly against the force plate in the balance. Individuals on the Earth, the control cohort, gained about 240 g/month ($p = 0.0002$). Males and females gained a similar amount of weight on Earth (no main effect of sex). During the study, the study pigs lost weight to starting size (which was used as a covariate in the ANCOVA). Earth-bound and space pigs developed substantial dewlaps and were lethargic at the conclusion of the study.

CONCLUSIONS:

Our view that weight and weight gain would be zero in space was confirmed. A similar result was obtained in other model organisms. We are currently in the process of obtaining necessary Federal IRBs.

ACKNOWLEDGEMENTS:

I am grateful for generous support from the National Research Foundation, Black Hole Diet Plans, and the High Fructose Sugar Association. Transport flights were funded by SPACE-EXES, the consortium of wives divorced from insanely wealthy space-flight startups. I am also grateful for comments on early drafts by Maifana Athletic Club, Corpus Christi, USA. Finally, sincere thanks to the Cuy Foundation for generously donating animal care after the conclusion of the study.

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Xavier, M. 1965. Elastane Purchases Accelerate Weight Gain In Case-control Study. Journal of Obesity. 2:23-40.



- Keep the material simple
- Use the full space, but don't overfill
- Don't just use large font
- Leave enough space between sections





**PIGS IN SPACE:
EFFECT OF ZERO GRAVITY
AD LIBITUM FEEDING ON WEIGHT
GAIN IN CAVIA PORCELLUS**

Colin B. Purrington

6673 College Avenue, Swarthmore, PA 19081 USA

THE HIGH FRUCTOSE
SUGAR ASSOCIATION

SPACE EXES

ABSTRACT:

One ignored benefit of space elimination of obesity, a chronic majority in many parts of the world, is that individuals in a condition of obesity are eliminated. Indeed, in space one can eliminate obesity by restricting food intake and tubular feeding and never even (only side effect would be the new stretchy pants/exercise pants). If schemes start as very good theories be rather harmful, we tested our pilot experiment in a colony of *Peromyscus* maintained on the Internet. Individuals were housed separately and amounts of high-calorie food pellets (vegetables were not available in the laboratory) were given to each individual. After 5 years, we found that individuals who had gained the most weight appeared. In addition to weight appearing to be gained over protocol. If space continues to be believed that assumption is sound, the overweight — and those at risk space would be a lasting cure.

INTRODUCTION:

The current obesity epidemic started in the early 1960s with the invention and proliferation of elastane and related stretchy fibers, which released wearers from the rigid constraints of clothes and permitted monthly weight gain without the need to buy new outfits. Indeed, exercise today for hundreds of million people involves only the act of wearing stretchy pants in public, presumably because the constrictive pressure forces fat molecules to adopt a more compact tetrahedral shape (Davis, 1995).

MATERIALS AND METHODS:

One hundred female Guinea pigs (Cavia porcellus) were housed separately and fed fresh fruits and vegetables for 48 months. The pigs were individually weighed by ductal balance sensitive to 0.0001 grams. The cohort was similarly maintained and analyzed by statistics.

was 0.0000 ± 0.0002 g. Some were zero, some more, but these were due to the duct tape, we believe, and pushed briefly against the force transducers on the Earth, the control group ($p = 0.0002$). Males and females of weight on Earth (no main effect of sex during the study was related to weight) as a covariate in the ANCOVA). We developed substantial deadweights on the transducers at the conclusion of the study.

USIONS:

eight and weight gain would be zero in space was confirmed. Although we have not replicated this experiment on larger animals or primate. We are currently in the process of obtaining necessary human trial permissions, and should have our planned experiment

ACKNOWLEDGEMENTS:

I am grateful for generous support from the National Research Foundation, Black Hole Diet Plans, and the High Fructose Sugar Association. Transport flights were funded by SPACE-EXES, the consortium of wives divorced from insanely wealthy space-flight startups. I am also grateful for comments on early drafts by Mafana Athletic Club, Corpus Christi, USA. Finally, sincere thanks to the Cuy Foundation for generously donating animal care after the conclusion of the study.

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 Xavier, M. 1965. Elastase Purchases Accelerate Weight Gain In Case-control Study. Journal of Obesity 2:23-40.

colinpurrington.com/2012/example-of-bad-scientific-poster



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Design Consideration



<https://www.vyond.com/resources/mike-morrison-vyond-transform-science-betterposter/>



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Fonts

- Do not use more than two font types
- Text should be legible from a distance of 1.5 m to 2 m
- Do not use all UPPER CASE type
 - Makes things difficult to read
- Do not use a different font type to highlight points
 - E.g. In this sentence, I want to emphasise the word 'emphasise'.
- Do not use ***bold italicised underlined*** text



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Equations

- Should be kept to a minimum
- Should only be present if critical to your findings
- Should be large enough to be readable
- Should be accompanied by explanations of all variables





- Use colours sparingly to emphasise, differentiate and add interest
- Consider the feelings that certain colours convey
- Background and text should have high contrast and complement each other
- Too much colour can be confusing
- Colour on a monitor will look different in print



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Figures

Images are important as they can convey a lot of information efficiently

- All figures need a caption
- All figures should be referenced in the text
- Annotations should be large enough and lines should be thick enough to be viewed from a distance
- Avoid Clipart



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Graphs

Images are important as they can convey a lot of information efficiently

- Design your graphs carefully
 - Pick the most appropriate type – bar, line, pie?
 - Do not have more than six lines on a single plot
 - Multi-line plots or plots with more than one variable should have a legend
 - Should be simpler and more heavily drawn than for slides



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Presenting a poster

- Know what you want to say
- Be able to say it in under 2 minutes
- Style of an elevator pitch
- Don't feel you need to say everything about the project
- Not the same as your project presentation



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Presenting a poster

- Pitch appropriately
 - Avoid jargon
 - Avoid vagueness
 - Ask about familiarity with the topic before you start and then adjust accordingly
- Convey your enthusiasm for your project
- Speak to your viewers, not your poster
- Be mindful of where you stand



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Presenting a poster

Introduce yourself

- Pitch appropriately
 - Avoid jargon
 - Avoid vagueness
 - Ask about familiarity with the topic before you start and then adjust accordingly
- Convey your enthusiasm for your project
- Speak to your viewers, not your poster
- Be mindful of where you stand



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Presenting a poster

Introduce yourself

Have a 'hook'

- Pitch appropriately
 - Avoid jargon
 - Avoid vagueness
 - Ask about familiarity with the topic before you start and then adjust accordingly
- Convey your enthusiasm for your project
- Speak to your viewers, not your poster
- Be mindful of where you stand



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Presenting a poster

Introduce yourself

Have a 'hook'

State the aim
What you have done
What's next

- Pitch appropriately
 - Avoid jargon
 - Avoid vagueness
 - Ask about familiarity with the topic before you start and then adjust accordingly
- Convey your enthusiasm for your project
- Speak to your viewers, not your poster
- Be mindful of where you stand



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Presenting a poster

Introduce yourself

Have a 'hook'

State the aim
What you have done
What's next

Explain that you are
happy to expand or
answer questions

- Pitch appropriately
 - Avoid jargon
 - Avoid vagueness
 - Ask about familiarity with the topic before you start and then adjust accordingly
- Convey your enthusiasm for your project
- Speak to your viewers, not your poster
- Be mindful of where you stand



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In Summary

- Know your people and purpose
- Follow the guidelines
- Be aware of aesthetics and design
- You and your poster are a team

