

Preparing a Poster Presentation

by

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Disclaimer

The following presentation is based on my own views, formed through many years of preparing posters for myself, and looking at other people's posters. They do not represent any "official" position on the best way to prepare posters!

Outline

- General points regarding scientific presentations
- Specific points applying to poster presentations
- Technicalities - actually making a poster

**General points
regarding scientific
presentations**

Keep it simple

- Don't assume that everyone is an expert in the field
 - Make it clear enough for students in your discipline, and for people from other disciplines.
 - Avoid “jargon” and unexplained abbreviations
- Avoid using long complicated words to impress people - it doesn't!
 - "Eschew obfuscation!!"

A rare example of "Plain English"

Haventree Software's "Honest Disclaimer"

If EasyFlow doesn't work: tough. If you lose millions because EasyFlow messes up, it's you that's out the millions, not us. If you don't like this disclaimer: tough. We reserve the right to do the absolute minimum provided by law, up to and including nothing.

This is basically the same disclaimer that comes with all software packages, but ours is in plain English and theirs is in legalese. We didn't really want to include any disclaimer at all, but our lawyers insisted.

(From the manual for EasyFlow software)

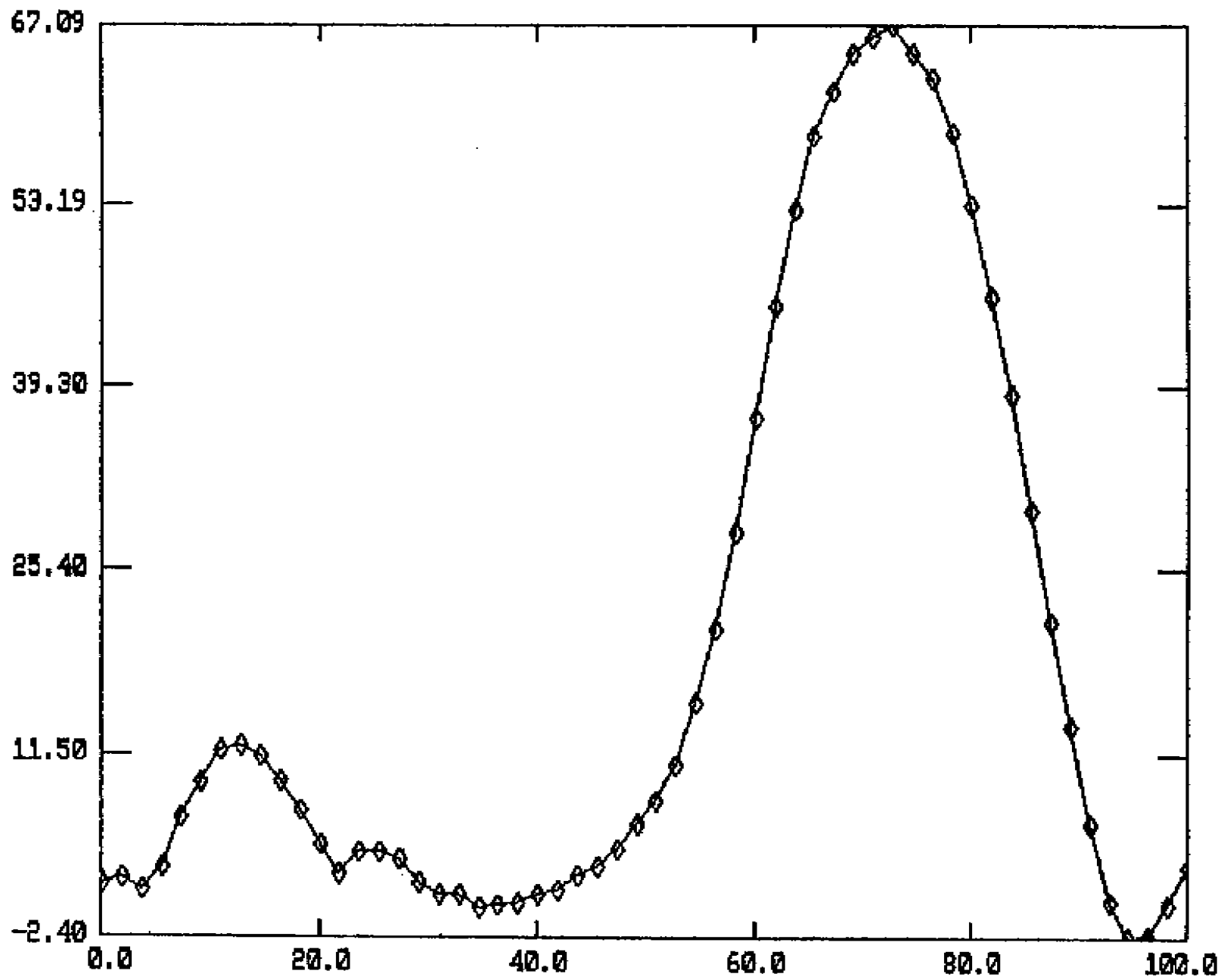
Avoid spurious accuracy

- Percentages: if there are less than 100 in the sample, don't give decimal places
 - 7 out of 11 is 64%, not 63.64%!
- Statistical values such as "p" and "r" should only be quoted to 2 places
 - e.g. $p < 0.05$; $r = 0.94$
- Give subject ages as mean (to one decimal place) and range, not standard deviation, for example:
 - mean 43.1 years, range 29-68 (easy to understand)
 - mean 43.148 years, s.d. 7.415 (hard to understand)

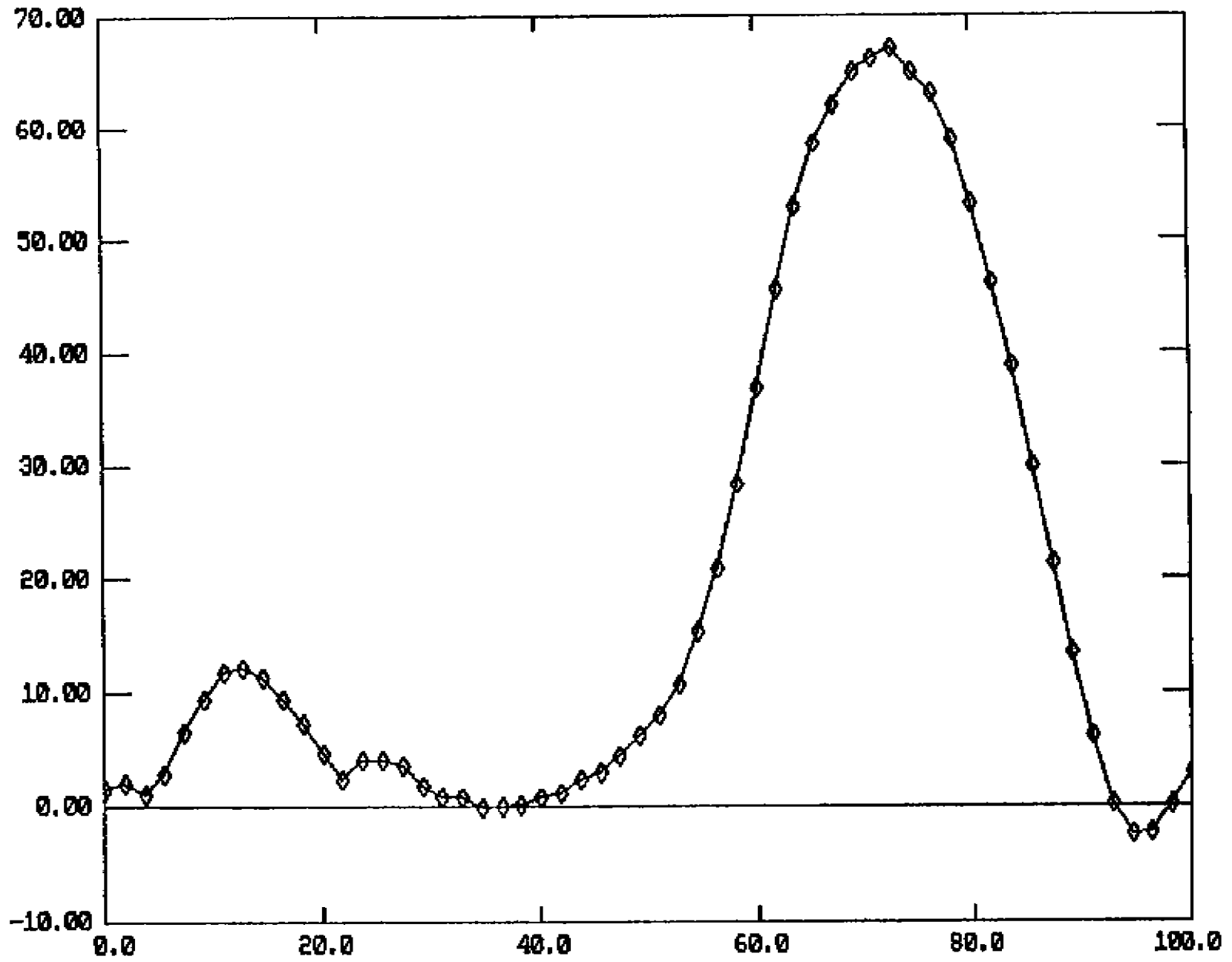
Computer-prepared graphs

- When drawing graphs, don't let a computer design crazy scales for you!
 - e.g. 2.19, 5.38, 7.57...

A computer-designed "crazy scale" (vertical axis)



The same graph with a "sensible" scale on the vertical axis



Use statistics sensibly

- Understand that there may still be a real difference between two groups, even if the statistical test fails to support it
 - e.g. because the sample was too small
- Also understand that a statistically significant result may have no practical significance in the "real world"

Don't be arrogant or complacent

- Whether it is a written paper, an oral presentation or a poster, have someone else review it before you “go public”!

**Specific points
applying to poster
presentations**

Posters are on the increase

- Many meetings now have more posters than platform presentations
 - They often say that the two are equivalent, but this is rarely the case
 - The organizers may ask “if you aren’t accepted for platform presentation, are you willing to present it as a poster?”
- The advantage to the organizers is that many more delegates can present their work (and thus attend the meeting)
 - Many employers will not pay for people to attend a meeting unless they are presenting

Advantages of a poster presentation

- You do not have to speak to a roomful of people
- You do not have to publicly answer “awkward questions”
- You often have better one-on-one discussions with people who are interested in your work
- It is a better format for presenting work which would not interest many delegates
 - e.g. highly technical or mathematical details
- If it appears in the proceedings, it carries equal weight with a platform, as being a “publication”

Disadvantages of a poster presentation

- It does not carry the prestige of a platform presentation
- It is less likely to get you “known”
- You have to prepare and transport the poster
- You have to mount and remove it at specified times
- You have to “stand by your poster” while people wander round during the poster session

Start by getting the information you need

- Find out whether the meeting organizers have specified particular requirements for the poster display
- For example:
 - Dimensions of poster
 - Font and font size
 - Layout of title, authors and affiliations
 - Particular section headings
 - Whether the published abstract should be included
 - Format for references and citations

General points

- Don't put too much on the poster
 - It deters people from stopping to read it
- Pay attention to appearance:
 - Have a large clear title, name the authors, and institution(s)
 - Don't write all in capitals - it makes it hard to read
 - Don't mix fonts
 - Font sizes should be large
 - Use 1½ or double line spacing
 - Use lots of graphs, charts, pictures and diagrams
- Don't assume everyone will read it from start to finish - they won't!
 - Every part of it must be complete and self-explanatory

A poster is not the same thing as a written paper

- The worst type of poster imaginable:
 - You take a copy of the paper suitable for journal publication, cut it into sections and stick it on the wall
- What to aim for:
 - A succinct and visually appealing description of the research
- Each section should be short
 - Leave out a lot of the detail
 - People can ask you questions to fill in the gaps
- Language should be simple and clear
 - Use numbered or bulleted lists, not long sentences
- Have an abstract or summary which says briefly what you did and what you found

Poster presentations need different wording

Example of written text:

This project sought to establish the ideal specifications for clinically useful wheelchair pressure mapping systems, and to use these specifications to influence the design of an innovative wheelchair pressure mapping system.

Example of poster presentation:

Aims of study:

- Define the ideal wheelchair pressure mapping system
- Design a new system to meet these specifications

A word about graphics

- Papers in journals discourage photographs and seldom permit color
 - Poster displays allow both - so make the most of it!
- Color is visually appealing
 - It also makes graphs, charts and tables much easier to follow
- Use a “visual” approach:
 - Where possible, use diagrams rather than tables
 - Where possible, use tables rather than text
- However - you still need to keep it simple!

Never include a "busy" table like this!

Isometric muscle strength (Nm) before and after training

Muscle group	After training			
	Before training	3 months	12 months	36 months
	Knee extension			
Injured	144±63§	194±60	173±69	171 ±66
Uninjured	179±63	202±57	171 ±62	168±64
Ratio>0.9*	11/26	18/23	18/24	15/22
	Knee flexion			
Injured	88±37	123±35	104±29	94±23
Uninjured	96±36	115±37	103±19	95±34
Ratio>0.9*	15/26	19/23	17/24	17/22
	Hip abduction			
Injured	108±24	124±34	91±25	93±22
Uninjured	109±31	121±34	93±27	98±31
Ratio>0.9*	21/26	19/23	16/24	15/22
	Hip adduction			
Injured	82±25	100±34	76±25	87±32
Uninjured	75±28	94±30	79±21	77±30
Ratio>0.9*	18/26	14/23	14/24	17/21

*Number of patients with injured/uninjured strength >0.9 / total number of patients

Technicalities

Actually making a poster

Two ways to make a poster

- **The do-it-yourself method**
 - Print out each section on letter or legal paper
 - Stick it onto one or more backing sheets
 - Labor-intensive, but “cheap and cheerful”
- **The “professional” method**
 - Assemble the whole poster as a single sheet
 - Have it professionally printed to a suitable large size
 - Produces a very nice looking result
 - Significant cost involved
 - Specialized printers may charge hundreds of dollars
 - Kinko’s can print from your Word or PowerPoint file
 - Cost is \$60-\$80
 - But they cannot do it while you wait

DIY (“cheap and cheerful”) method - 1

- Type all the text into a word document
 - Prepare the title, authors, etc. in a separate document
- Make each section start on a new page
- Change page layout to Landscape
- Format the whole document in the same font (e.g. Arial) and size (e.g. 24pt)
- Edit as needed to get each section onto a single sheet
 - or plan how to use additional sheets, if needed
- Also make blank pages with captions for diagrams, etc.
- Print it out
 - use high quality printer setting and paper
- Use a paper cutter to trim the sheets
 - make the sheets all the same width, but only use as much height as is needed

DIY (“cheap and cheerful”) method - 2

- Get construction paper in a suitable background color
- Easier method - each section on a separate sheet
 - Cut oversize pieces of construction paper
 - Glue each section on a separate piece
 - use spray adhesive
 - Use the paper cutter to trim a uniform border on each one
 - At the meeting, pin each section up separately
- Harder method - do the whole thing on one sheet
 - The size of the construction paper limits the size of the poster
 - The layout must be decided before you start sticking
 - mistakes are difficult to correct
 - The poster must be transported as a large sheet or roll

More “professional” method

- This is no easier, but the resulting poster looks better
- Prepare the poster using a template in Word or PowerPoint
 - A PowerPoint template can be found at:
<http://oneweb.utc.edu/~Michael-Whittle/postertemplate.ppt>
- The template consists of a large number of text boxes
 - The appropriate text or graphic must be inserted into each box (42pt Arial in the example)
 - The boxes can be resized and moved around
 - They can also be added or deleted
 - It takes a lot of trial and error to get it right!
- Once finished, the file can be taken to Kinko’s
 - or to another print shop
 - They will generally have it ready in a few hours
- The poster must be transported as a large sheet or roll

EFFECTS OF LOAD CARRIAGE ON LUMBAR SPINAL MOTION

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Introduction

Low back pain is fairly common in young people, which may be partly due to the fact that many carry heavy book bags, often asymmetrically (Grimmer & Williams, 2000). This could cause overuse of some muscle groups, and might even lead to structural changes, including scoliosis.

Purpose

The present study investigates the way in which carrying a load suspended from the shoulder girdle alters the kinematics of the lumbar spine. This should enable recommendations to be made regarding book bag carriage by students, particularly those who are already suffering from low back pain.

Methodology

- 10 normal young adult subjects
 - 4 male, 6 female
 - Average age 23.0 years
- Used Vicon system
 - 6 cameras
 - 50 Hz sampling
- Measured 3-D motion of lumbar spine
 - Method of Whittle & Levine, 1995, 1999
 - Two-marker rig on sacrum
 - Three-marker rig at T12/L1 junction
- Simulated backpack used
 - Mass 10kg
 - Not fully representative:
 - Must not cover lumbar spine
- Stands and walks:
 - without backpack
 - with backpack - symmetrical loading
 - with backpack - asymmetrical loading

Results

Mid-point	Lordosis	Lateral bend	Axial rotation
Standing	27.6 (7.7)	0.3 (1.8)	0.3 (3.5)
Unloaded	23.7 (8.2)	0.0 (1.5)	1.3 (3.2)
Symmetrical	22.4 (11.6)	0.1 (1.6)	0.4 (3.3)
Asymmetrical	20.6 (9.2)	-4.2 (2.5)	3.7 (4.4)
Range	Lordosis	Lateral bend	Axial rotation
Unloaded	5.0 (1.0)	12.0 (3.1)	12.0 (3.5)
Symmetrical	5.4 (1.7)	12.4 (2.1)	13.7 (3.8)
Asymmetrical	5.2 (1.0)	11.2 (2.3)	12.0 (2.5)

Table 1: Mid-point and range of motion (deg) for all test conditions, in three dimensions: mean (s.d.)

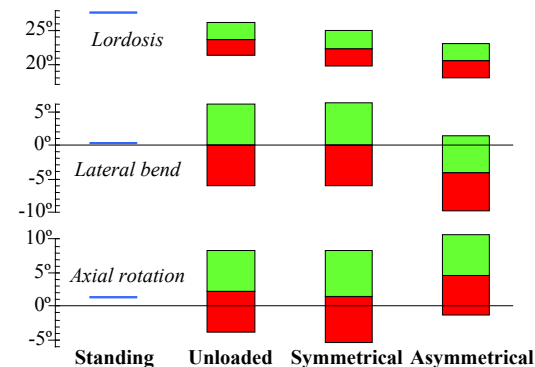
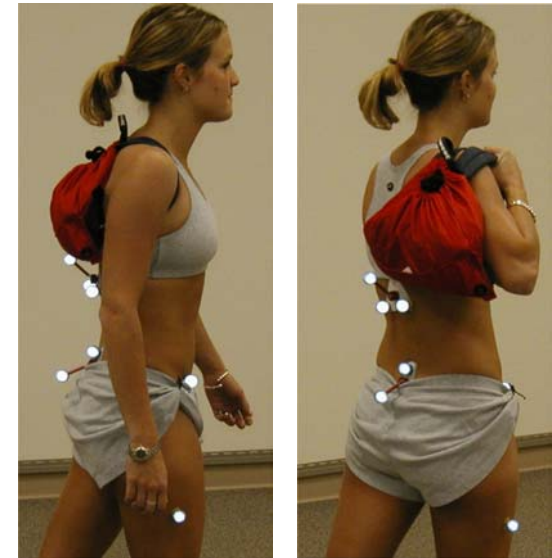


Fig. 1: Mid-point and range of motion (deg) for all test conditions, in three dimensions

Discussion

With symmetrical loading, the lumbar lordosis flattened a little, but there were no important changes in axial rotation or lateral bend. When loading was applied asymmetrically, the shoulder carrying the load was held slightly higher and a little further back. The range of motion was not significantly different between the unloaded, symmetrical and asymmetrical conditions. Any contributions to low back pain are more likely to be due to increased forces than to grossly abnormal movements.



Symmetrical loading

Asymmetrical loading

Summary

- Lordosis:
 - less when walking
 - even less with symmetrical loading
 - less again with asymmetrical loading
- Lateral bend & axial rotation:
 - Symmetrical load:
 - no differences seen
 - Asymmetrical load:
 - loaded side higher
 - loaded side further back
- Range of motion:
 - No important differences seen

References

- Grimmer K, Williams M. (2000) Appl Ergon 31:343-360.
- Whittle MW, Levine DF. (1995) Gait Posture 3:82.
- Whittle MW, Levine D. (1999) Hum Mov Sci 18, 681-692.