

Creating posters using **PowerPoint 2016**

Introduction

Microsoft PowerPoint is an accessible and effective tool for creating research posters. During our hands-on, tutor led workshop, you will have the opportunity to create an A0 poster using PowerPoint. We will give you a scaled down copy of the final poster. Use this for reference as you work through the workbook exercises.

We will also give you general design advice on layout, fonts and font size, and use of colour and visuals to help ensure your poster creates a lasting impression.

Prerequisite knowledge

Although no previous knowledge of PowerPoint is required, you should be familiar with Microsoft Word and the Windows environment, including file management. Tutors will be on hand to help. Please ask!

What you will learn

By the end of this workshop you will be able to use MS PowerPoint 2016 to:

- set up a custom poster size
- use guides and grids to help align text boxes and images
- change backgrounds
- insert text from Word and work with text boxes
- format text boxes using the Format Painter
- insert charts from Excel
- insert and position images

Exercises

To get the most from this workshop session, please work sequentially through the workbook exercises. The steps you need to take to work through each exercise are clearly marked with bullet points.

Approximate time

It should take you just over 90 minutes to complete these exercises; however, we have designed the workbook so that you can continue to work at your own pace, away from the workshop.

Hints & warnings

Look out for **hints and explanatory text** and **warnings**. We use these throughout the workbook to bring various points to your attention.



Hints and explanatory text



Warnings

1 Download workshop files

To save you time, we provide you with ready prepared text, an image, chart and table. You will use these to create your workshop poster.

The files you will require are:

- AAM-DXA.tif
- KL_grade.xlsx
- fig_captions.docx
- poster_text.docx
- tmrc.tif
- uni-logo-col.png

Before beginning this workbook, download the workshop files from our website and save them to your Home Filespace (**H:** drive).

- Open Internet Explorer and navigate to:
<https://abdn.ac.uk/it/services/training/dundee>
- Click **Download course files**
- Click **Save as**
- In the **Save As** dialog box, navigate to your **H:** drive and then click **Save**
- Close Internet Explorer
- Navigate to your **H:** drive and right-click on your **course-files.zip** folder
- Select **Extract all...**
- Make sure files will be extracted to your **H:** drive and click **Extract**

This may take a few minutes. Once you have saved all the workshop files to your H: drive, start the workbook exercises on page 2 of your workbook.



If you have any problems during the workshop, please ask a tutor for help.

2 Starting PowerPoint and creating a new presentation

2.1 Start PowerPoint

- Click **Start** then type **PowerPoint**
The search results will show the icon for PowerPoint
- Click the icon to open PowerPoint, then click **Blank Presentation**.

2.2 Specify a size and orientation for your poster

Conference organisers often provide guidelines for poster presentations, e.g. size, orientation (landscape or portrait), title placement and font size.

You will now specify a size and orientation for your poster.

- From the **Design** tab on the ribbon, select **Slide Size**, then **Custom Slide Size...**
The **Slide Size** dialog box will appear.
- Select **Custom** from the **Slides sized for:** drop down menu.
In the **Width:** box type **84** and in the **Height:** box type **118** (Figure 1).
Under **Orientation > Slides** select **Portrait**, if it is not already selected.
- Click **OK**.
- If prompted about scaling content, click **Ensure Fit**.

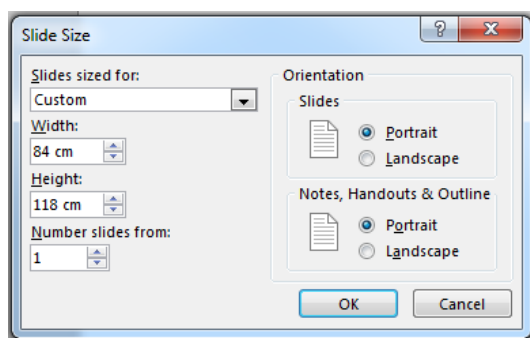


Figure 1 : Slide Size dialog box showing the Custom option selected in the drop-down menu.

2.3 Remove default Text Boxes

It's best to start laying out your poster content on a **blank** presentation slide.

To remove the default Text Boxes in the centre of the slide:

- Click once on the dotted edge of *each* text box to select it, and press the **Back Space** or **Delete** key to delete.



You can also click on the **Home** tab, click **Layout** and select **Blank**.

2.4 Save your poster

Save your poster on your **H:** drive, in the same location you saved the workshop files. Name the file **workshop** and save it as File type **PowerPoint Presentation (*.pptx)**.



Avoid losing hours of work - save your poster frequently!

3 Zoom in and out of your work area

Working with such a large page size is challenging. To help you position and edit elements accurately, you will need to **Zoom** in and out frequently.



Work at about **15** or **25%** when laying out the poster content.

Zoom in to about **33** or **50%** when adding detail, or to accurately line up content.

There are many ways to do this. Use the method that suits you best.

The Zoom box

To change the zoom value, locate **Zoom** under the **View** tab on the ribbon. To view your poster at its actual size, click **Zoom** and change the percentage in the **Zoom box** to 100% (Figure 2).

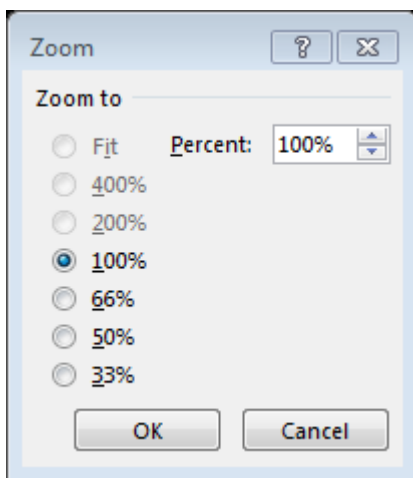


Figure 2: Zoom box at 100%.

The Zoom slider

As with other Office 2016 applications (e.g. Word) you can also use the Zoom slider on the status bar at the bottom of the window (Figure 3).



Figure 3: The Zoom slider at 100%.

Mouse scroll button

You can also zoom in and out by holding down the **Ctrl** key on your keyboard and using the scroll button in the centre of your mouse.



Close the **Slide Layout** task pane to allow you more room to work on screen.

Ask a tutor if you need help with this.

4 Poster Backgrounds

If you don't want a plain white background for your poster, then PowerPoint offers many alternatives – from applying a simple change of colour, to applying a gradient, patterned, or textured fill. It is also possible to apply a background image.

Bear in mind that the background should never detract from the poster content. Keep colours pale and soft, and if you do choose to use a textured or patterned background, keep these subtle to ensure poster text is still legible.



It is possible to change the background at any stage during the creation of your poster.

4.1 Applying a Background Colour

- From the **Design** tab, click **Format Background** (Figure 4).



Figure 4: Format Background button.

The **Format Background** panel will open on the right of the screen.

- Select the **Solid Fill** radio button.
- Click the drop-down colour menu to view default colour choices.

For the purposes of today's workshop, we will apply a pale blue background.

- Select the **Blue, Accent 1, Lighter 80%** swatch (Figure 5).

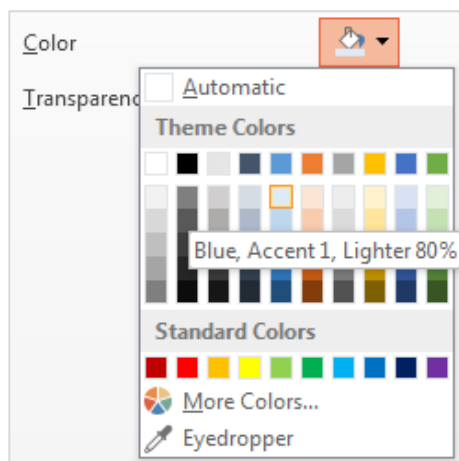


Figure 5: Blue Accent 1 Lighter 80%.

- Close the **Format Background** panel.
- Save** your poster presentation, leaving it open.



Quick save with the keyboard shortcut **Ctrl + S**.

5 Working with guides and the grid

Use PowerPoint's drawing **guides** and **grid** to help you align text boxes and other objects. **Guides** appear as thin dotted lines on your poster – you can move them around and create as many as you need. The **grid** divides your slide into multiple columns and rows, much like graph paper.



Although you can see the guides and grid on-screen, they will not print out on your final poster.

5.1 Display drawing guides

To display the drawing guides (if not already displayed):

- Hold down the **Alt** key and press **F9**.
- To switch them off, simply press **Alt + F9** again.

By default there are two guides, one centered horizontally and the other vertically.

- To create a new guide, hold down the **Ctrl** key while clicking on and dragging an existing guide.
- To move an existing guide, simply click on it and drag.

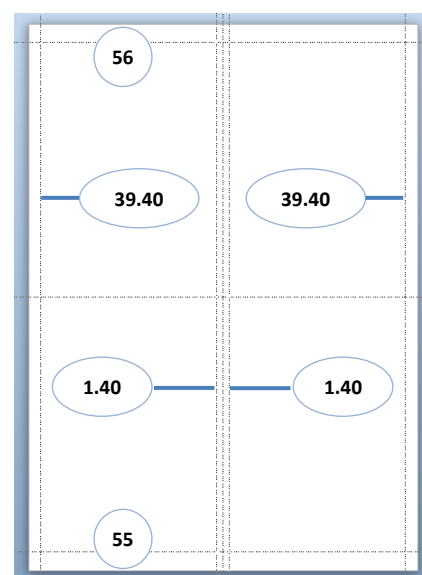
As you drag a guide, its position (measured from the center guide in cm) is displayed alongside. The center guide's position is **0.00**.

5.2 Create 2 new horizontal guides

- Zoom in to 40% - this will give you greater control when creating your guides and allow you to place them accurately.
- Hold down the **Ctrl** key and click and drag the horizontal guide **upwards** until the position reads 56.00. This will be your poster's **top** margin.
- Hold down the **Ctrl** key and click and drag the horizontal guide **downwards** until the position reads 55.00. This will be your poster's **bottom** margin.

5.3 Create 4 new vertical guides

- Hold down the **Ctrl** key and click and drag the vertical guide **to the left** until the position reads 39.40. This will be the **left** margin.
- Hold down the **Ctrl** key and click and drag the vertical guide **to the right** until the position reads 39.40. This will be the **right** margin.
- Now create a further 2 new vertical guides, 1.40 from either side of the centre vertical guide. This will be the **centre** margin.
- **Save** your poster, leaving it open.



5.4 Display the grid

You may also like to use PowerPoint's **grid** to help align text boxes and other objects.

- Hold down the **Shift** key and press **F9**.
- To switch it off, simply press **Shift + F9** again.

6 Add a Poster Title

The poster title is your first communication with your audience and should clearly convey the essence of your poster. It should be clear and concise, aim for 15 words or less. It should be interesting and attention grabbing, studies show that your audience will decide whether to continue reading in as little as 3 seconds! It should be readable from 4.5 metres away, we recommend a minimum of 60pt in size.

6.1 Create a Text Box

You should create your poster title using a **Text Box**. This allows you to use subscript or superscript text in your title (e.g. H₂O) or to individually italicise words (e.g. when using Latin names), if required.

- Zoom in to **25%**.
- Select the **Insert** tab on the ribbon, locate the **Text** group and click on **Text Box** (Figure 6).

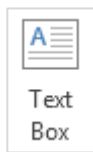


Figure 6: Text Box button.

- To create a Text Box, place the cursor on the left margin and click and drag across your

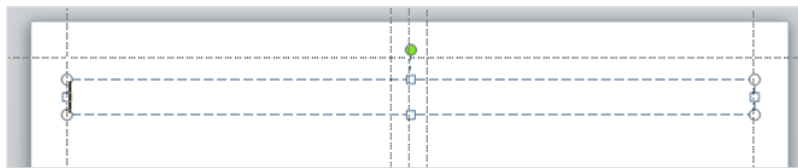


Figure 7: Click and drag to draw a Text Box.

poster to the right margin (Figure 7).

6.2 Insert text into your Text Box to create a poster title

- Type the following title text into the box, making sure you press the **Enter** key after the word 'using' so that the text appears on 2 lines as shown below:

**Active Appearance Models using
DXA Imaging for the assessment of knee OA**



If your poster title runs onto two or more lines, think carefully about where to insert line breaks. Remember you can press **Enter** to add a line break manually, as above.

6.2.1 Format your poster title

- Select the text within the Text Box by clicking and dragging with the mouse.
- Click on the selected text with the **right** mouse button and select **Font...** from the pop-up menu. The **Font** dialog box appears (Figure 8).

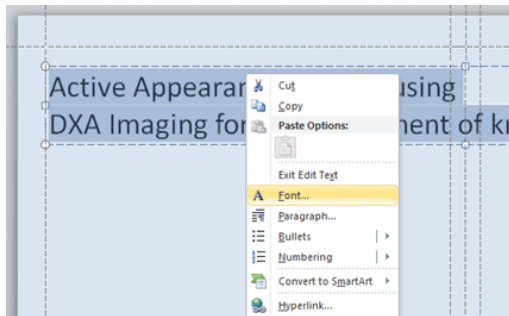


Figure 8: Select Font...

- Change the font options as follows (Figure 9):

Latin text font: Impact

Font style: Regular

Size: 96 pt

Font color: Blue, Accent 1, Darker 25% (under **Theme Colors**)

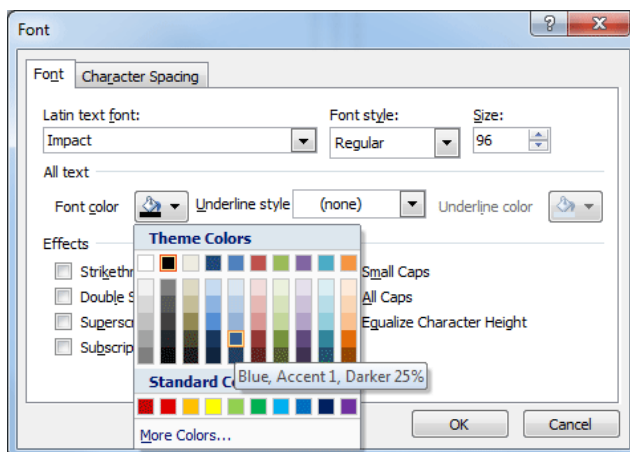


Figure 9: Font options.

- Click **OK**.



You can use the **Font** dialog box at any time to apply subscript or superscript to individually selected letters or figures.

6.3 Move and resize the Text Box

All Text Boxes have *handles* (Figure 10) on them that allow you to adjust their size and shape.

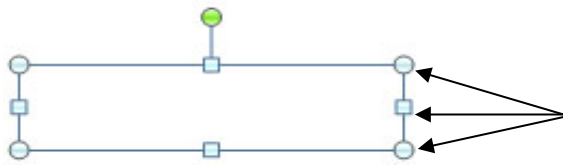


Figure 10: 'Handles'.

6.3.1 Resize the Text Box

- With the Text still selected, grab the handlebar on the bottom right corner and drag it towards the left, resizing the Text Box until it is just wide enough to allow the title to appear on 2 lines, as shown (Figure 11).

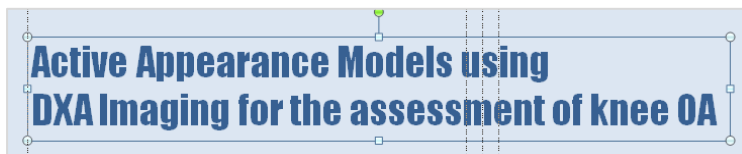


Figure 11: Resize Text Box.



If you drag the handlebar too far, the text will start to wrap within the Text Box.

6.3.2 Position the Text Box

- To move the entire Text Box, first make sure it is still selected, then click once on its border (the cursor will change to a cross and its border will change from a dashed line ---- to a solid line —) and drag (Figure 12).

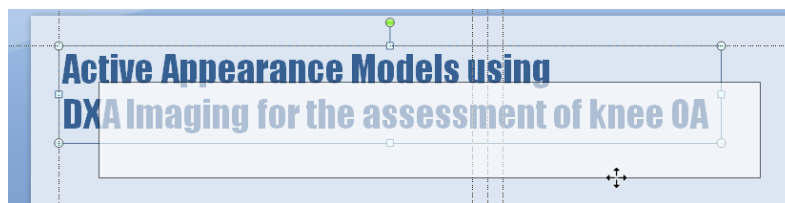


Figure 12: Move Text Box.

- Drag the title Text Box until the top of it *snaps* to the top margin.



Once you have selected a Text Box, you can also use the **arrow keys** to move it up, down, left and right, one nudge at a time.

- **Save** your poster presentation, leaving it open.

7 Insert and format text from a Word document

You can type text directly into your poster using Text Boxes, as in the previous exercise, or you can paste it in from an existing Word document.



First make sure to de-select your poster title Text Box by clicking on an empty area of your poster. If you don't, any new text you paste into your poster will go directly into the selected Text Box, overwriting your poster title!

7.1 Insert and format the authors' names

- Browse your computer to navigate to your **H:** drive, and the location where you saved the workshop files.
- Open the Word file *poster_text.docx*.
- Select the first paragraph containing the list of authors and associated institutions, then go to the **Home** tab and select **Copy** from the **Clipboard** group (or use the keyboard shortcut **Ctrl + C**).
- Return to PowerPoint and from the **Clipboard** group on the **Home** tab, select **Paste Special** from the **Paste** drop-down menu (Figure 13).
- The **Paste Special** dialog box appears (Figure 14).

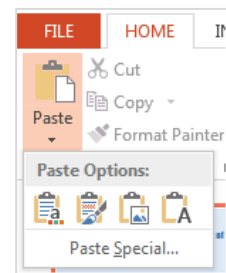


Figure 13: Paste Special

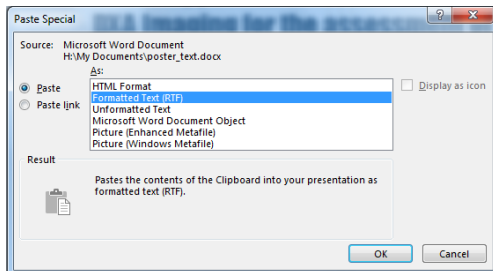


Figure 14: Paste Special Dialog Box

- Select **Formatted Text (RTF)** from the list of options.
- Click **OK**.
- The 2 paragraphs appear in a Text Box in the centre of the poster.



Paste as **Formatted Text (RTF)** to retain Word formatting options such as bulleted lists, and subscript and superscript text.

- Select all the text within the Text Box by clicking and dragging with the mouse, and change the Font to **Arial** and the Font **Size** to 40pt.

To change the font, use the **Font** dialog box by right clicking on the selected text. Alternatively, format the text from the **Home** tab on PowerPoint's ribbon.

- Click **OK**.
- Use the same method to select the author names and make them **Bold**.
- Use the handlebars to widen the Text Box so that its left side lines up with the left margin and its right side with the right margin.
- Drag the Text Box and position it so that it sits a little below the title. De-select the Text Box.
- **Save** your poster presentation, leaving it open.

7.2 Insert and format *Aim* and *Conclusions* text

By default, Text Boxes have no border or background colour. However, you can customise your Text Boxes to suit the design of your poster. For example, if your poster has a coloured background, filling your Text Boxes with white and adding a border will make them stand out and the text within them easier to read.

7.2.1 Copy and Paste the *Aim* and *Conclusions* Text

Use the same method, as described in 7.1 **Insert and format the authors' names**, to **copy** and **paste** the **Aim** and **Conclusions** blocks of text from Word into two Text Boxes on your poster.



You will need to copy and paste each of these blocks of text separately, creating one Text Box at a time. Make sure you deselect each new Text Box before pasting the next block of text.

7.2.2 Format the *Aim* and *Conclusions* Heading Text

- Select the *Aim* and *Conclusions* headings and make the following changes to the font:
 - **Font:** **Impact**
 - **Colour:** **Blue, Accent 1, Darker 25%**
 - **Size:** **55pt**
- With the headings still selected, right-click and select **Paragraph...** from the pop-up menu.
- In the Paragraph dialog, set:
 - **Alignment:** **Centered**
 - **Spacing After:** **18pt**
- Click **OK**.
- De-select heading text.

7.2.3 Format the *Aim* and *Conclusions* Body Text

- Select all the remaining text within each Text Box and make the following changes to the font:
 - **Font:** **Arial**
 - **Size:** **40pt**
- With the remaining text still selected, right-click on it and select **Paragraph...** from the pop-up menu.
- In the Paragraph dialog box set:
 - **Indentation Before text** to **1cm**
 - **Indentation Special** to **Hanging By 1cm**
 - **Spacing After** to **18pt**
- Click **OK**.

7.2.4 Format **Aim** and **Conclusions** Text Boxes

- Right-click on the **Aim** Text Box and select **Format Shape...** from the pop-up.
- In the **Format Shape** pane on the right of the screen, select **Shape Options** and set the following options:

Fill

- Solid fill Color: White

Line

- Solid line Color: Blue, Accent 1, Darker 25%
Width: 6pt

- Select **Text Options** from the top of the panel.
- Click on the **Text Box** icon (Figure 15: Text Box Icon).
- Set the following options:
 - Do not Autofit
 - Left, right, top and bottom margin *all* 0.6cm (Figure 16).



Figure 15: Text Box Icon

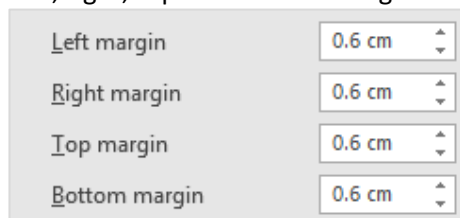


Figure 16: Margins

- Click **Close**, then format the **Conclusion** Text Box in the same way.

7.3 Position **Aim** and **Conclusions** Text Boxes

- To help position these Text Boxes, make sure PowerPoint's guides and grid are displayed on-screen (press **Alt + F9**).
- Drag the **Aim** and **Conclusion** Text Boxes roughly into position under the author names – *refer to the sample poster*. Don't worry too much about positioning them accurately at the moment.
- Select the **Aim** Text Box.
- Use the handlebars to adjust the width of the Text Box so that its right side lines up with the left of centre guideline (Figure 17).
- Select the **Conclusion** Text Box.
- Use the handlebars to adjust the width of the Text Box so that its left side lines up with the right of centre guideline, and to adjust the height to match the **Aim** Text Box.
- **Save** your poster presentation, without closing (**Ctrl + S**).

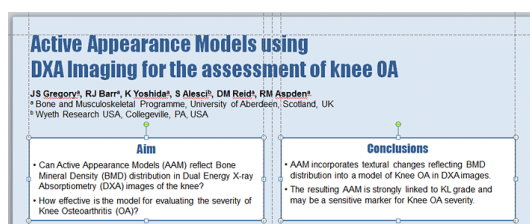


Figure 17: Positioning Aim and Conclusions Text Boxes

7.4 Insert and format *Background, Methods, and Results* text

Use the same method, as described in 7.1 Insert and format the authors' names^{Error! Reference source not found.}, to copy and paste the **Background, Methods, and Results** blocks of text from Word and into three Text Boxes on your poster. It is easiest to do this one at a time.



You will need to copy and paste each block separately. Make sure you deselect each new Text Box before pasting the next block of text.

7.4.1 Format the *Background, Methods and Results* Heading Text

- Select the **Background** Heading text and format the font and paragraph as follows:

Font

- **Font** Impact
- **Size** 55pt
- **Colour** Blue, Accent 1, Darker 25%

Paragraph

- **Alignment** Centered
- **Spacing After** 18pt

- De-select Heading text.

7.4.2 Format the *Background, Methods and Results* Text

- Select all the remaining text within the **Background** Text Box. Format the font and paragraph as follows:

Font

- **Font** Arial
- **Size** 31pt

Paragraph

- **Indentation Before text** 1cm
- **Indentation Special** Hanging by 1cm
- **Spacing After** 18pt

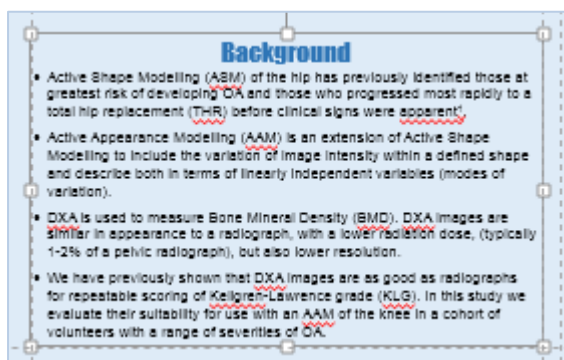


Figure 18: Formatting Background text.

- Deselect the text.

7.4.3 Format **Background, Methods, and Results** Text Boxes

- Right-click on the **Background** Text Box and select **Format Shape...** from the pop-up menu.
- In the **Format Shape** panel, select **Shape Options** and set the following options:

Fill

- Solid fill Color: White

Line

- Solid line Color: Blue, Accent 1, Darker 25%
Width: 6pt

- Select **Text Options** from the top of the panel.

- Click on the **Text Box** icon (Figure 19).

- Set the following options:

- Left, right, top and bottom margin *all* 0.6cm

- Click **Close**.

- Format the **Methods** and **Results** Text Boxes in the same way.

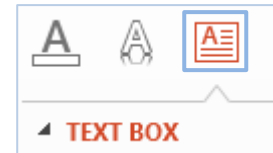


Figure 19: Text Box



Once you've formatted the Background Text Box, you could use the **Format Painter** to quickly apply the same formatting to the **Methods** and **Results** Text Boxes.

Ask a tutor for help!

7.5 Position **Background, Methods, and Results** Text Boxes

- Drag the **Background, Methods** and **Conclusion** Text Boxes roughly into position under the **Aim** Text Box – *refer to the sample poster*.
- Don't worry too much about positioning them accurately at the moment – you will do that in a later exercise.
- Use the handlebars to adjust the width of each Text Box so that its right side lines up with the left of centre guideline (Figure 20).

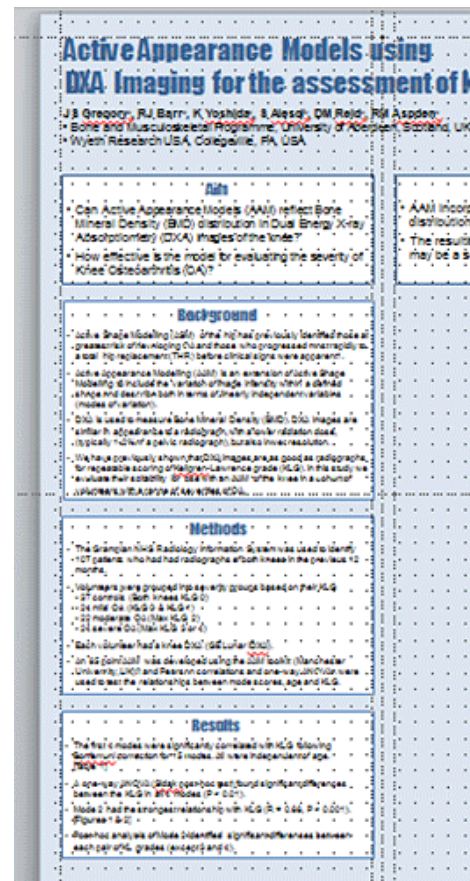


Figure 20: Positioning Background, Methods, and Results Text Boxes

7.6 Insert and format the References text

- Repeat the same process to **copy** and **paste** the **References** text into a Text Box.

7.6.1 Format the *References* Heading

- Select the **References** Heading and make the Font **Arial, Bold**, Font Size **40pt**.

7.6.2 Format the *References* Text

- Select all the remaining text within the References Text Box and make the Font **Arial** and the Font Size **28pt**.
- Drag this Text Box to the foot of the poster, lining it up with the bottom margin, and resizing it so that it spans the width of the poster from left to right margin – *refer to sample poster* (Figure 21).

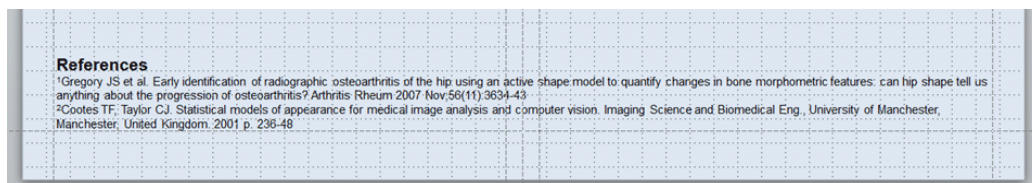


Figure 21: Positioning References text.

- **Save** your poster presentation, without closing.

8 Create a rectangular box for image, chart and table

8.1 Insert a rectangular box

- **Zoom** out to 20%.
- Go to the **Insert** tab, and select **Shapes** from the **Illustrations** group.
- **Select Rectangle**.
- The cursor will change to a simple cross +
- To draw a rectangle, click and drag downwards from the centre right margin, just below the **Conclusions** Text Box, to the right margin, roughly lining up with the bottom of the **Results** Text Box – *refer to sample poster* (Figure 22).
- **Right-click** on the rectangle and select **Format Shape...** from the pop-up menu.
- In the **Format Shape** panel, set the following options:
 - **Fill:** Solid fill, White
 - **Line Color:** Solid line, Blue, Accent 1, Darker 25%
Width 6pt
- Click **Close**.
- **Deselect** the box.

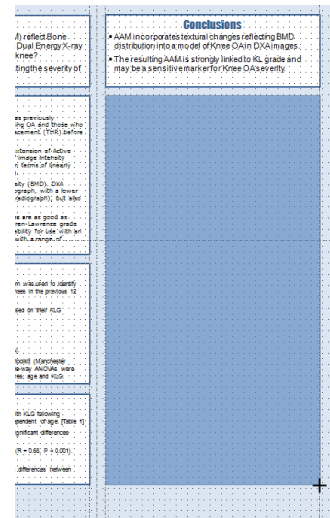


Figure 22: Draw Rectangle

8.2 Create a Heading in the rectangular box

- Select the **Insert** tab on the ribbon, locate the **Text** group and click on **Text Box**.
- Place the cursor on the left edge of the rectangle and click and drag across to the right edge.
- Type **Results** (Figure 23).
- Select the **Results** text and make the Font **Impact**, Size **55pt**, and colour it the same dark blue as the poster title (Blue, Accent 1, Darker 25%).
- With the Heading still selected, from the **Paragraph** group under the **Home** tab, choose **Center text**.
- Drag the **Results** Heading Text Box roughly into position at the top of the rectangular box – *refer to the sample poster* (Figure 24).

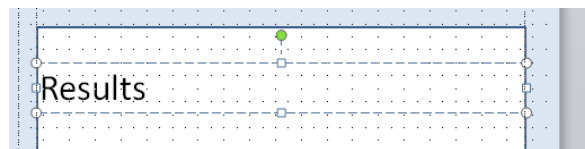


Figure 23: Results heading

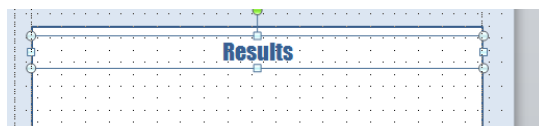


Figure 24: Position Results heading

- **Deselect** the Text Box and **Save** your poster presentation, without closing.

9 Insert and resize images and add a caption

For the best results, start with an image larger than required, and scale it down. If your image editing software allows you to set image resolution, anything between 200-300 dpi (or ppi) should be sufficient.



It is not advisable to use logos and images captured from web pages. Such images may look fine onscreen but are seldom of a high enough quality for print.

9.1 Insert the University and TMRC logos

- Go to the **Insert** tab, locate the **Images** group and select **Pictures**.
- Browse to your **H:** drive, and the location you saved the workshop files to.
- Click on the image file *uni-logo-col.png* to select it, then click on **Insert**.
- Click and drag the University logo so that it sits in the top right hand corner of your poster, lining it up with the top and right guides – *refer to sample poster*.
- De-select the University logo.
- Insert the **Translational Medicine Research Collaboration** logo *tmrc.tif* in the same way, positioning it immediately below the University logo (Figure 25).
- De-select the TMRC logo.

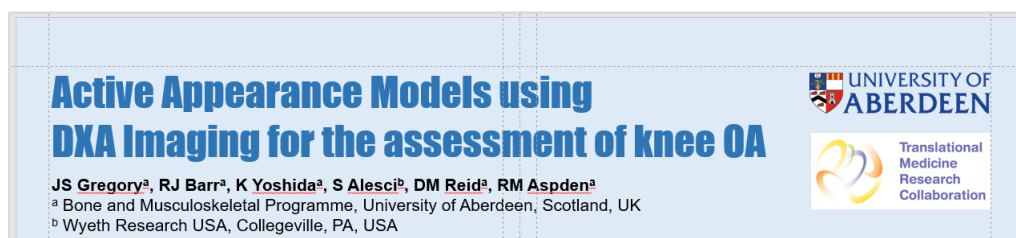


Figure 25: University and TMRC logos in position.

- **Save** your poster presentation, leaving it open.



We are using the University of Aberdeen logo here. You can obtain good quality, high-resolution copies of the University of Dundee logo, suitable for large format posters, from the University of Dundee's **Creative Services** department:

Web: <https://www.dundee.ac.uk/brand/toolkit/logo/>

email: print@dundee.ac.uk

Copyright



For general guidelines on copyright, see:

<https://www.dundee.ac.uk/governance/policies/copyright-webcopy/>

9.2 Insert and resize an image

- Repeat the above procedure to insert the image *AAM-DXA.tif*.
- With the image still selected, select the **Format** tab on the ribbon, underneath **Picture Tools**.
- Locate the **Size** group and expand it to open the **Format Picture** panel (Figure 26).

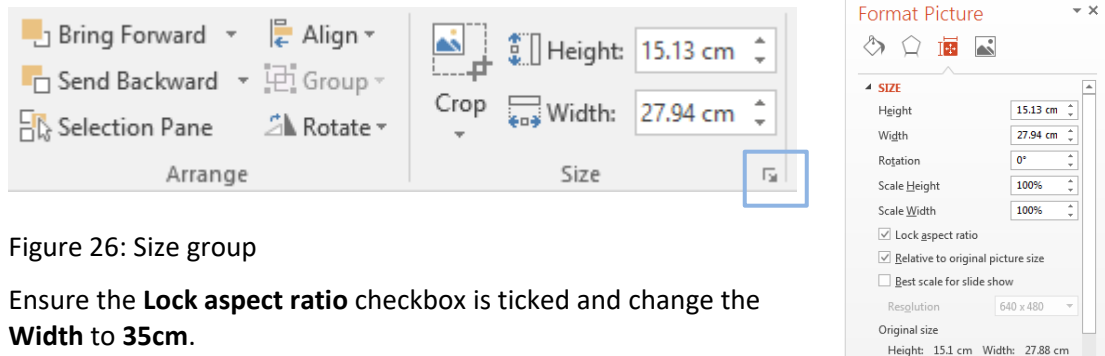


Figure 26: Size group

- Ensure the **Lock aspect ratio** checkbox is ticked and change the **Width** to **35cm**.
- Click **Close**.
- Position this image below the **Results** Heading at the top of the rectangular box.
- De-select the image.
- **Save** your poster presentation, leaving it open.



Try to avoid scaling up images in PowerPoint by more than 120% as this may distort them. Wherever possible, resize your poster images before inserting them into PowerPoint using image-editing software, e.g. Microsoft Photo Editor, Adobe Photoshop, or JASC Paint Shop Pro.

For the best results, start with an image larger than required, and scale it down. If your image editing software allows you to set image resolution, anything between 200-300 dpi (or ppi) should be sufficient.

It is not advisable to use logos and images captured from web pages. Such images may look fine onscreen but are seldom of a high enough quality for print.

9.3 Insert an image caption

- Using **This PC**, browse to your **H:** drive, and the location you saved the workshop files to.
- Open the Word file *fig_captions.docx*.
- Select the first paragraph containing the caption for **Figure 1**, then go to the **Home** tab and select **Copy** from the **Clipboard** group (or use the keyboard shortcut **Ctrl + C**).
- Return to PowerPoint and from the **Home** tab select, **Paste Special** from the **Paste** drop-down menu.
- From the **Paste Special** dialog box, select **Formatted Text (RTF)** and then click **OK**.
The caption appears in a Text Box on the poster.
- Select all the text within the Text Box and make the Font **Arial** and Font **Size 28pt**.
- Click **OK**.
- Select the caption Heading, **Figure 1**, and make it **Bold**.
- Drag the Text Box and position it so that it sits below the *AAM-DXA.tif* image.
Use the handlebars to reduce the width of the Text Box so that it lines up with the image – *refer to sample poster*.
- De-select the caption.
- **Save** your poster presentation, without closing.

10 Insert a chart and add a caption

In most cases, by the time researchers are putting together a poster presentation, they will have already created graphs and charts to support their research findings using spreadsheet software such as *Excel*. You can copy and paste graphs and charts directly from Excel into PowerPoint.

10.1 Copy a Chart from Excel

- Using **This PC**, browse to your **H:** drive, and the location you saved the workshop files to.
- Locate and open the Excel file *KL_grade.xlsx*.
- Click once on the Chart in the centre of the Excel spreadsheet. The **Chart Tools** tab will appear on the ribbon (Figure 27).
- Click on the Chart Tools **Format** tab.
- Locate the **Current Selection** group. Select **Chart Area** from the chart elements drop-down menu – this will ensure the entire chart is selected before copying (Figure 27).

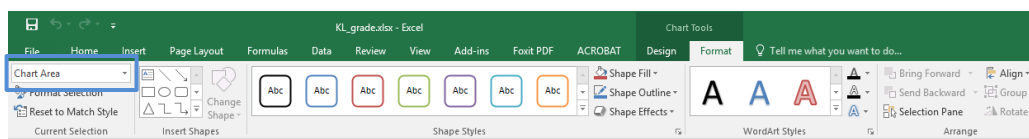


Figure 27: the Chart Tools and Layout tabs appear on the ribbon

- Still in Excel, go to the **Home** tab and select **Copy** from the **Clipboard** group (or use the keyboard shortcut **Ctrl + C**).

10.2 Paste a chart into PowerPoint

- Return to your PowerPoint poster.
- Click on the **Home** tab, locate the **Clipboard** group and select **Paste Special...** from the **Paste** drop-down menu.
- From the **Paste Special** dialog box, select **Picture (Enhanced Metafile)** and then click **OK** (Figure 28).



This imports the file as a graphic that will retain any formatting styles you applied in Excel and allow you to resize the chart without losing quality.

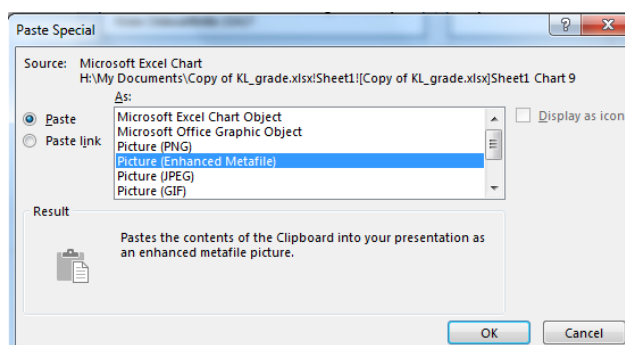


Figure 28: Paste Special

- With the chart still selected, resize it in the same way you resized the image, changing its **Height** to **17cm**.

- With the chart still selected, position it so that it is centred below the **Figure 1** caption – *refer to poster sample*.
- De-select the chart.
- **Save** your poster presentation, leaving it open.
- **Exit** Excel.

10.3 Insert a caption

- Return to the Word file *fig_captions.docx*.
- Select the first paragraph containing the caption for Figure 2, then go to the **Home** tab and select **Copy** from the **Clipboard** group (or use the keyboard shortcut **Ctrl + C**).
- Return to PowerPoint and from the **Home** tab select, **Paste Special** from the **Paste** drop-down menu.
- From the **Paste Special** dialog box, select **Formatted Text (RTF)** and then click **OK**.
The caption appears in a Text Box on the poster.
- Select all the text within the Text Box and make the Font **Arial** and Font **Size 28pt**.
- Click **OK**.
- Select the caption Heading, **Figure 1**, and make it **Bold**.
- Drag the Text Box and position it so that it sits below the chart.
Use the handlebars to reduce the width of the Text Box so that it lines up with the chart – *refer to sample poster*.
- De-select the caption.
- **Save** your poster presentation, without closing.

11 Insert a table and add a table caption

You can use *Word* to create tables and then copy and paste them into PowerPoint.

11.1 Copy a Table from Word

- Return to the Word document *fig_captions.docx*
- Select the *Pearson Correlation* table and **copy** it to the clipboard (**Ctrl + C**).

11.2 Paste a table into PowerPoint

- Return to PowerPoint, and right-click on a blank area of your poster.
- Select **Paste** from the pop-up menu.
- The table appears in your poster.

11.3 Resize and format Table

- With the table still selected, position it below the **Figure 2** caption, lining up the left edge of the table with the left edge of the caption
- To resize the table:
 - **Pick up** the handlebar on the bottom right of the table. The cursor will change to a double-headed arrow.
 - **Holding** down the Shift key, drag the handlebar down wards and to the right until the table is roughly the same width as the **Figure 1** image – *refer to sample poster*.
- With the table still selected, click on the **Design** tab under the **Table Tools** option.
- Click on the **More** arrow to display more table styles (Figure 29).

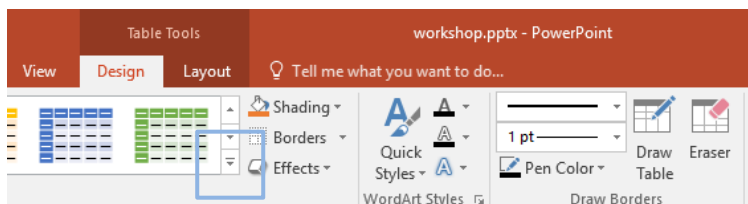


Figure 29: Display more table styles

- Under the **Light** group, select **Light Style 2, Accent 1** (Figure 30).



Figure 30: Select a table style

11.4 Insert a caption and footnote

- Return to the Word document *fig_captions.docx* and **Copy** the **Table 1** caption (**Ctrl + C**).
- Return to PowerPoint and **Paste Special**, selecting **Formatted Text (RTF)** and then clicking **OK**.
- The caption appears in a Text Box on the poster.
- Select all the text within the Text Box and make the Font **Arial** and Font **Size 28pt** and click **OK**.
- Select the caption Heading, **Table 1**, and make it **Bold**.
- Drag the caption Text Box and position it so that it sits *above* the table.
 - Use the handlebars to reduce the width of the Text Box so that it lines up with the sides of table – *refer to sample poster*.
- De-select the caption.
- Return to the Word document *fig_captions.docx* and copy and paste the table footnote (* Significant after bonferroni...) in the same way.
- Select all the text within the Text Box and make the Font **Arial** and Font **Size 24pt** and click **OK**.
- Drag the footnote Text Box and position it so that it sits *below* the table.
 - Use the handlebars to reduce the width of the Text Box so that it lines up with the sides of the table – *refer to sample poster*.
- De-select the footnote.
- **Save** your poster presentation, without closing.

12 Finishing touches

You can help your poster title stand out from the coloured background by inserting a white box behind it.

12.1 Insert white boxes

- Zoom out to 20%.
- Go to the **Insert** tab, and select **Shapes** from the **Illustrations** group (Figure 31).

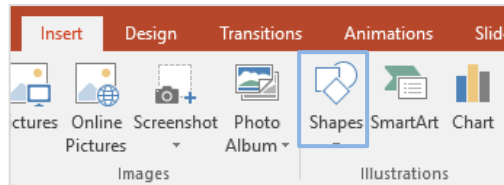


Figure 31: Insert Shape

- Select **Rectangle**, the cursor will change to a simple cross +
- To draw a rectangle, click and drag downwards from the top left corner of the poster to the right margin, roughly lining up with the bottom of the Authors Text Box (Figure 32).

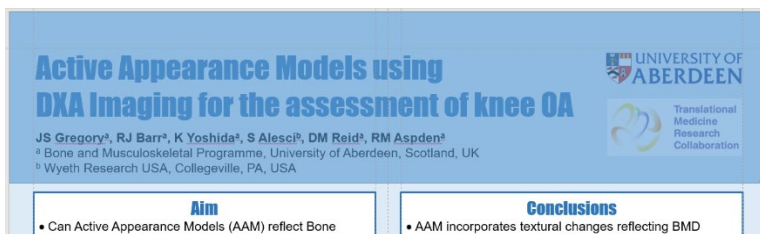


Figure 32:
Draw
rectangle

- Right-click on the rectangle and select **Format Shape...** from the pop-up menu.
- In the **Format Shape** dialog box, set the following options:
 - **Fill:** Solid fill, White
 - **Line Colour:** No line
- Click **Close**.
- With the rectangle still selected, right-click and select **Send to Back** from the pop-up menu.
- Use the same method to insert a white box behind the **References** text at the foot of the poster – *refer to sample poster*.

12.2 Check alignment of text boxes

Zoom out to 20% and look carefully at the positioning of Text Boxes on your poster – *compare with the sample poster*. If necessary, re-position the boxes.

- The **Aim**, **Background**, **Methods**, and **Results** Text Boxes should be equally spaced vertically over the left column.
- The top of the **Conclusions** Text Box lines up with the top of the **Aim** Text Box.
- The top of the **Results** images box lines up with the top of the **Background** Text Box.
- The bottom of the **Results** images box lines up with the bottom of the **Results** Text Box.



You may find it helpful to use PowerPoint's **Align** options.

Select the Text Boxes you wish to align, then click on the **Drawing Tools Format** tab. In the **Arrange** group, you can click **Align** and select from options such as **Distribute Vertically**, **Align Top** and **Align Bottom**.

12.3 Insert directional arrows

Sometimes it can be helpful to add directional arrows to your poster design. These act as visual clues and help lead viewers through your content in sequence.

- Zoom in to 40%, to the area between the **Background** and **Methods** Text Boxes.
- Go to the **Insert** tab, and select **Shapes** from the **Illustrations** group.
- Select **Down Arrow** from the **Block Arrows** group.
- The cursor will change to a simple cross +
- Click once on the blank area between the **Background** and **Methods** Text Boxes. A default arrow will appear.
- Right-click on the arrow and select **Format Shape** from the pop-up menu.
- In the Format Shape dialog box, set the following options:
 - **Fill** - Solid fill and Blue, Accent 1, Lighter 40%
 - **Line Colour** – No line
- Click on **Close**.
- With the arrow still selected, you can adjust the shape and size of your arrow by clicking and dragging its handlebars.
- Position the arrow between the two text boxes as shown (Figure 33).

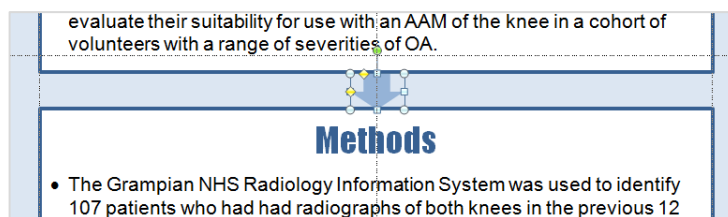


Figure 33: Position arrows

- With the arrow still selected, right-click and select **Send to Back** from the pop-up menu.
- Use the same method to insert an arrow between the **Methods** Text Box and the **Results** Text Box – or copy and paste the first arrow!
- Use the same method to insert an arrow between the **Aim** and **Conclusions** Text Boxes.
 - **Hint:** You will need to rotate this one!
- **Save** your poster presentation, without closing.

13 End the workshop session

Your final poster should look something like this:

Active Appearance Models using DXA Imaging for the assessment of knee OA

J.S. Gregory^a, R.J. Barr^a, K. Yoshida^a, S. Alessi^b, D.M. Reid^a, R.M. Aspden^a
^aBone and Musculoskeletal Programme, University of Aberdeen, Scotland, UK
^bWyeth Research USA, Collegeville, PA, USA

UNIVERSITY OF ABERDEEN
Translational Medicine Research Collaboration

Aim

- Can Active Appearance Models (AAM) reflect Bone Mineral Density (BMD) distribution in Dual Energy X-ray Absorptiometry (DXA) images of the knee?
- How effective is the model for evaluating the severity of Knee Osteoarthritis (OA)?

Background

- Active Shape Modelling (ASM) of the hip has previously identified those at greatest risk of developing OA and those who progressed most rapidly to a total hip replacement (THR) before clinical signs were apparent.
- Active Appearance Modelling (AAM) is an extension of Active Shape Modelling to include the variation of image intensity within a defined shape and describe both in terms of kinematically independent variables (modes of variation).
- DXA is used to measure Bone Mineral Density (BMD). DXA images are similar in appearance to a radiograph, with a lower resolution (typically 1-2% of a pelvic radiograph), but also lower resolution.
- We have previously shown that DXA images are as good as radiographs for reproducible scoring of Kellgren-Lawrence grade (KLG). In this study we evaluate their suitability for use with an AAM of the knee in a cohort of volunteers with a range of severities of OA.

Methods

- The Ocranium NMR Radiology Information System was used to identify 107 patients who had had radiographs of both knees in the previous 12 months.
- Volunteers were grouped into severity groups based on their KLG:
 - 37 controls (Both knees KLG 0)
 - 24 mild OA (KLG 0 & KLG 1)
 - 22 moderate OA (Max KLG 2)
 - 24 severe OA (Max KLG 3 or 4)
- Each volunteer had a knee DXA (GE Lunar **DXA**).
- An 85 point AAM was developed using the AAM toolkit (Manchester University, UK) and Pearson correlations and one-way ANOVAs were used to test the relationships between mode scores, age and KLG.

Results

- The first 4 modes were significantly correlated with KLG following **Bonferroni** correction for 15 modes. All were independent of age. (Table 1)
- A one-way ANOVA (Sidak post-hoc test) found significant differences between the KLG in all 4 modes ($P < 0.01$).
- Mode 2 had the strongest relationship with KLG ($R = 0.68$, $P < 0.001$). (Figures 1 & 2)
- Post-hoc analysis of Mode 2 identified significant differences between each pair of KLG grades (except 3 and 4).

Conclusions

- AAM incorporates textural changes reflecting BMD distribution into a model of Knee OA in DXA images.
- The resulting AAM is strongly linked to KLG grade and may be a sensitive marker for Knee OA severity.

Results

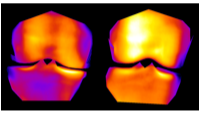


Figure 1. False-colour images of mode 2 (x 0.5, dx 1) from AAM of the knee built from DXA images. (Medial compartment on left) (Med. mode 2 score (left) showed joint space narrowing, lateral osteophytes on both the femur and tibia, a wider medial femoral condyle, a narrower intercondylar notch and a more convex distal portion of BMD, particularly in the tibia. The lateral (lateral plateau) is extended beyond the lateral femoral condyle, possibly indicating malalignment).

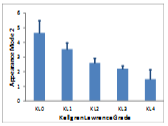


Figure 2. Plot of the mean score (± 1 s.d.) for Appearance mode 2 at each KLG grade.

| Pearson Correlation | Mode 1 | Mode 2 | Mode 3 | Mode 4 |
|---------------------|--------|--------|--------|--------|
| KLG Coefficient | 0.17 | -0.68* | 0.37 | -0.32* |
| P-value | 0.003 | <0.001 | <0.003 | 0.002 |

Table 1. Correlations between Mode scores and KLG grade.

* Significant after **Bonferroni** correction for the 15 modes compared ($P < 0.003$)

References

Gregory JS et al. Early identification of radiographic osteoarthritis of the hip using an active shape model to quantify changes in bone morphometric features: can hip shape tell us anything about the progression of osteoarthritis? *Arthritis Rheum* 2007 Nov;50(11):2634-43.
Zoccolotti TF, Taylor CJ. Statistical models of appearance for medical image analysis and computer vision. *Imaging Science and Biomedical Eng.* University of Manchester, Manchester, United Kingdom. 2007. p. 258-65.

Print out a copy

If you would like to print out an A4 copy of your poster at any time:

- Click on the **File** tab.
- Select **Print**.
- Click **Full Page Slides** and tick the **Scale to fit paper** checkbox.
- Click **OK**.

Before you leave...

- Make sure you **Save** your presentation.
- Exit** from PowerPoint.
- Close** any other open applications, e.g. Word, Excel, Internet Explorer, etc.
- If appropriate, **Log off** the classroom PC.

14 Useful Links

- UoD Templates and logos - <https://www.dundee.ac.uk/brand/toolkit/>
- Printing - <http://www.dundee.ac.uk/externalrelations/creative-services/>

