Substitution of red meat with legumes and risk of primary liver cancer in UK Biobank participants a prospective cohort study

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Abstract

Purpose: The abstract serves both as a general introduction to the topic and as a brief, non-technical summary of the main results and their implications. The abstract must not include subheadings (unless expressly permitted in the journal's Instructions to Authors), equations or citations. As a guide the abstract should not exceed 200 words. Most journals do not set a hard limit however authors are advised to check the author instructions for the journal they are submitting to.

Methods: The abstract serves both as a general introduction to the topic and as a brief, non-technical summary of the main results and their implications. The abstract must not include subheadings (unless expressly permitted in the journal's Instructions to Authors), equations or citations. As a guide the abstract should not exceed 200 words. Most journals do not set a hard limit however authors are advised to check the author instructions for the journal they are submitting to.

Results: The abstract serves both as a general introduction to the topic and as a brief, non-technical summary of the main results and their implications. The abstract must not include subheadings (unless expressly permitted in the journal's Instructions to Authors), equations or citations. As a guide the abstract should not exceed 200 words. Most journals do not set a hard limit however authors are advised to check the author instructions for the journal they are submitting to.

Conclusion: The abstract serves both as a general introduction to the topic and as a brief, non-technical summary of the main results and their implications. The abstract must not include subheadings (unless expressly permitted in the journal's Instructions to Authors), equations or citations. As a guide the abstract

Table 1 Patient Characteristics (N = 126744)

Variable	N = 126,744	N = 173
Typical diet yesterday	73,213 (58%)	105 (61%)
Age, years	60 (53, 65)	64.0 (60.0, 68.0)
Sex		
Female	70,659 (56%)	65 (38%)
Male	56,085 (44%)	108 (62%)
Educational level		
High	59,416 (47%)	76 (44%)
Intermediate	41,817 (33%)	52 (30%)
Low	25,472 (20%)	45 (26%)
Missing	39	
Townsend Deprivation Index	-2.4 (-3.8, 0.0)	-2.6 (-3.7, -0.7)
Missing	149	
Living alone	22,658 (18%)	34 (20%)
Missing	171	
Physical activity		
Above	58,111 (46%)	61 (35%)
Below	50,712 (40%)	79 (46%)
Missing	17,921 (14%)	33 (19%)
Smoking		
Never	72,583 (57%)	75 (43%)
Ever	54,122 (43%)	98 (57%)
Missing	39	
Alcohol intake, g/day	11 (0, 26)	11 (0, 29)
Waist circumference, cm	88 (79, 97)	98 (89, 107)
Missing	168	

[1] Median (IQR) for continous variables; n (%) for categorical variables

[2] Participants who reported eating a typical diet yesterday for all completed diet questionnaires.

[3] High: College or University degree; Intermediate: A levels/AS levels, O levels/GCSEs, or equivalent; Low: none of the

[4] Above or below the 2017 UK Physical activity guidelines of 150 minutes of moderate activity per week or 75 minutes of vig

should not exceed 200 words. Most journals do not set a hard limit however authors are advised to check the author instructions for the journal they are submitting to.}

Keywords: key, dictionary, word

Introduction

The Introduction section, of referenced text Campbell and Gear [1] expands on the background of the work (some overlap with the Abstract is acceptable). The introduction should not include subheadings.

Springer Nature does not impose a strict layout as standard however authors are advised to check the individual requirements for the journal they are planning to submit to as there may be journal-level preferences. When preparing your text please also

be aware that some stylistic choices are not supported in full text XML (publication version), including coloured font. These will not be replicated in the typeset article if it is accepted.

Results

Sample body text. Sample body text. Sample body text. Sample body text. Sample body text. Sample body text. Sample body text. Sample body text.

This is an example for first level head—section head

This is an example for second level head—subsection head

This is an example for third level head—subsubsection head

Sample body text. Sample body text. Sample body text. Sample body text. Sample body text. Sample body text. Sample body text. Sample body text.

Equations

Equations in LaTeX can either be inline or on-a-line by itself ("display equations"). For inline equations use the `$...$` commands. E.g.: The equation $H\psi = E\psi$ is written via the command `$H \psi = E \psi$`.

For display equations (with auto generated equation numbers) one can use the equation or align environments:

$$\|\tilde{X}(k)\|^2 \leq \frac{\sum_{i=1}^{p} \left\|\tilde{Y}_i(k)\right\|^2 + \sum_{j=1}^{q} \left\|\tilde{Z}_j(k)\right\|^2}{p+q}. \tag{1}$$

where,

$$\begin{aligned} D_\mu &= \partial_\mu - ig\frac{\lambda^a}{2}A^a_\mu \\ F^a_{\mu\nu} &= \partial_\mu A^a_\nu - \partial_\nu A^a_\mu + gf^{abc}A^b_\mu A^a_\nu \end{aligned} \tag{2}$$

Notice the use of `\nonumber` in the align environment at the end of each line, except the last, so as not to produce equation numbers on lines where no equation numbers are required. The `\label{}` command should only be used at the last line of an align environment where `\nonumber` is not used.

$$Y_\infty = \left(\frac{m}{\mathrm{GeV}}\right)^{-3}\left[1 + \frac{3\ln(m/\mathrm{GeV})}{15} + \frac{\ln(c_2/5)}{15}\right] \tag{3}$$

The class file also supports the use of `\mathbb{}`, `\mathscr{}` and `\mathcal{}` commands. As such `\mathbb{R}`, `\mathscr{R}` and `\mathcal{R}` produces $\mathbb{R}$, $\mathscr{R}$ and $\mathcal{R}$ respectively (refer Subsubsection 1).

Table 2 Caption text

temperature	pressure
0	0.0002
20	0.0012
40	0.0060
60	0.0300
80	0.0900
100	0.2700

Tables

Tables can be inserted via the normal `knitr::kable()` function or other table-generating packages.

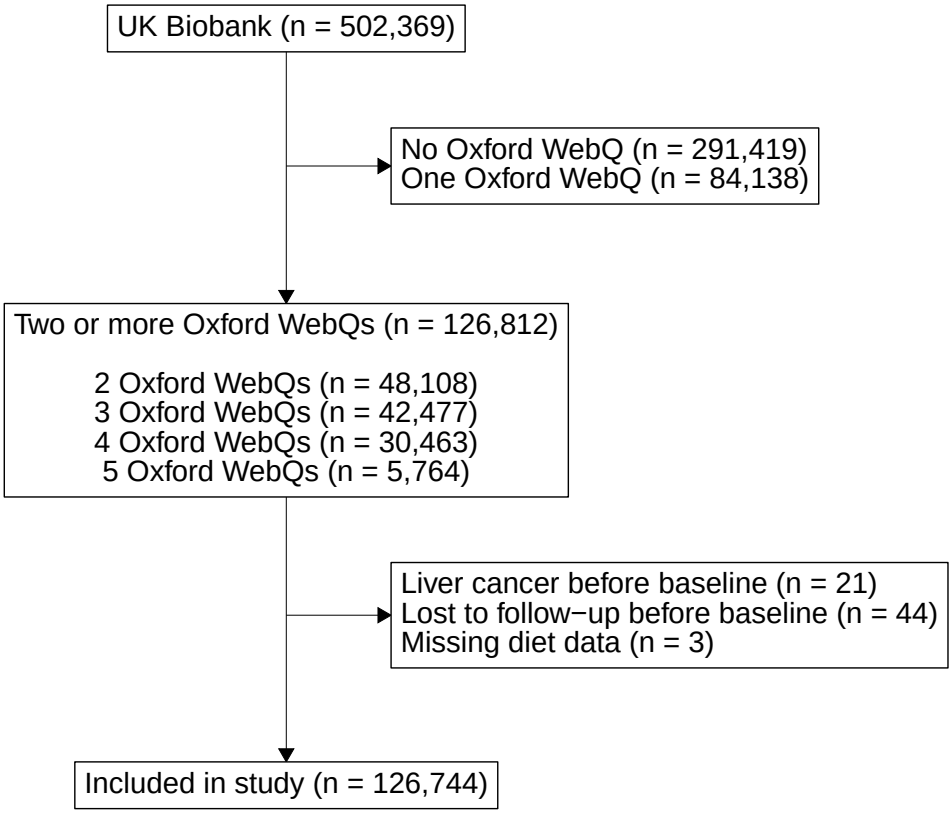

Fig. 1 Figure 1. Flowchart of included participants.

Tables can also be inserted via the normal table and tabular environment. To put footnotes inside tables you should use `\footnotetext[]{...}` tag. The footnote appears just below the table itself (refer Tables˜3 and 4). For the corresponding footnotemark use `\footnotemark[...]`
The input format for the above table is as follows:

```
\begin{table}[<placement-specifier>]
\caption{<table-caption>}\label{<table-label>}%
\begin{tabular}{@{}llll@{}}
\toprule
Column 1 & Column 2 & Column 3 & Column 4\\
\midrule
row 1 & data 1 & data 2  & data 3 \\
row 2 & data 4 & data 5\footnotemark[1] & data 6 \\
row 3 & data 7 & data 8  & data 9\footnotemark[2]\\
\botrule
\end{tabular}
```

Table 3 Caption text

Column 1	Column 2	Column 3	Column 4
row 1	data 1	data 2	data 3
row 2	data 4	data 5[1]	data 6
row 3	data 7	data 8	data 9[2]

Source: This is an example of table footnote. This is an example of table footnote.

[1]Example for a first table footnote. This is an example of table footnote.

[2]Example for a second table footnote. This is an example of table footnote.

```
\footnotetext{Source: This is an example of table footnote.
This is an example of table footnote.}
\footnotetext[1]{Example for a first table footnote.
This is an example of table footnote.}
\footnotetext[2]{Example for a second table footnote.
This is an example of table footnote.}
\end{table}
```

Table 4 Example of a lengthy table which is set to full textwidth

	Element 1[1]			Element 2[2]		
Project	Energy	σ_{calc}	σ_{expt}	Energy	σ_{calc}	σ_{expt}
Element 3	990 A	1168	1547 ± 12	780 A	1166	1239 ± 100
Element 4	500 A	961	922 ± 10	900 A	1268	1092 ± 40

Note: This is an example of table footnote. This is an example of table footnote this is an example of table footnote this is an example of table footnote this is an example of table footnote.

[1]Example for a first table footnote.

[2]Example for a second table footnote.

In case of double column layout, tables which do not fit in single column width should be set to full text width. For this, you need to use \begin{table*} ... \end{table*} instead of \begin{table} ... \end{table} environment. Lengthy tables which do not fit in textwidth should be set as rotated table. For this, you need to use \begin{sidewaystable} ... \end{sidewaystable} instead of \begin{table*} ... \end{table*} environment. This environment puts tables rotated to single column width. For tables rotated to double column width, use \begin{sidewaystable*} ... \end{sidewaystable*}.

Figures

As per the LaTeX standards you need to use eps images for LaTeX compilation and pdf/jpg/png images for PDFLaTeX compilation. Use the dev knitr option to use the approrpate format. This is one of the major difference between LaTeX and PDFLaTeX. Each image should be from a single input .eps/vector image file. Avoid using subfigures. The command for inserting images for LaTeX and PDFLaTeX can be generalized. The package used to insert images in LaTeX/PDFLaTeX is the graphicx package. Figures can be inserted via the normal figure environment as shown in the below example:

Algorithms, Program codes and Listings

Packages algorithm, algorithmicx and algpseudocode are used for setting algorithms in LaTeX using the format:

```
\begin{algorithm}
\caption{<alg-caption>}\label{<alg-label>}
\begin{algorithmic}[1]
. . .
\end{algorithmic}
\end{algorithm}
```

You may refer above listed package documentations for more details before setting algorithm environment. For program codes, the "program" package is required and the command to be used is \begin{program} ... \end{program}. A fast exponentiation procedure:

Similarly, for listings, use the listings package. \begin{lstlisting} ... \end{lstlisting} is used to set environments similar to verbatim environment. Refer to the lstlisting package documentation for more details.

A fast exponentiation procedure:

```
begin
  for i := 1 to 10 step 1 do
      expt(2,i);
      newline() od                    Comments will be set flush to the right margin
where
proc expt(x,n) ≡
  z := 1;
  do if n = 0 then exit fi;
     do if odd(n) then exit fi;
```

Table 5 Tables which are too long to fit, should be written using the "sidewaystable" environment as shown here

	Element 1[1]			Element[2]		
Projectile	Energy	σ_{calc}	σ_{expt}	Energy	σ_{calc}	σ_{expt}
Element 3	990 A	1168	1547 ± 12	780 A	1166	1239 ± 100
Element 4	500 A	961	922 ± 10	900 A	1268	1092 ± 40
Element 5	990 A	1168	1547 ± 12	780 A	1166	1239 ± 100
Element 6	500 A	961	922 ± 10	900 A	1268	1092 ± 40

Note: This is an example of table footnote this is an example of table footnote this is an example of table footnote this is an example of table footnote this is an example of table footnote.

[1]This is an example of table footnote.

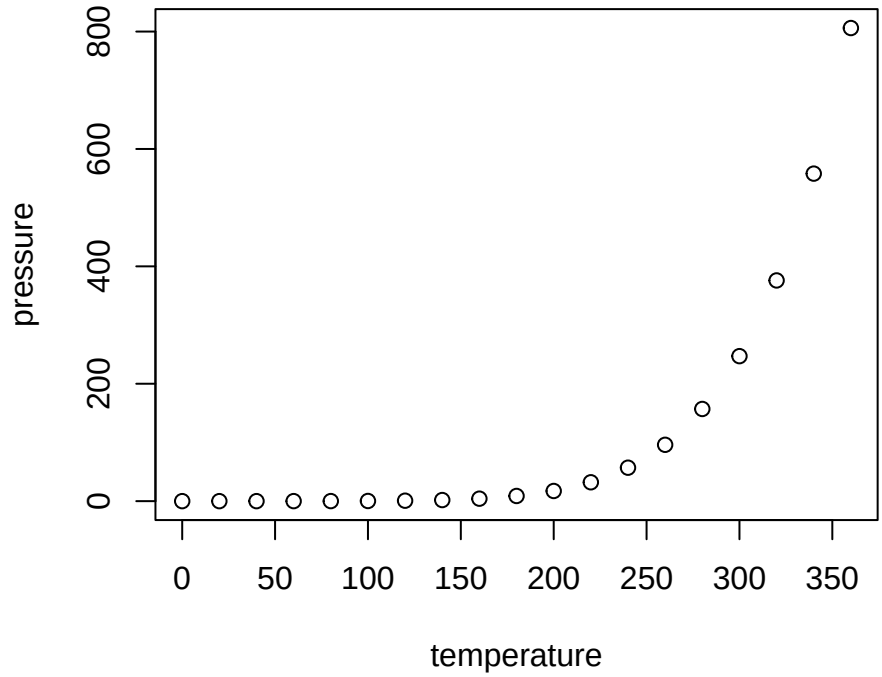

Fig. 2 This is an example of a caption

```
        comment: This is a comment statement;
        n := n/2; x := x * x od;
    { n > 0 };
    n := n - 1; z := z * x od;
  print(z).
end
```

```
for i:=maxint to 0 do begin \{ do nothing \} end; Write('Case
insensitive'); Write('Pascal-keywords.');
```

Cross referencing

Figures and tables are labeled with a prefix (fig or tab, respectively) plus the chunk label. Other environments such as equation and align can be labelled via

Algorithm 1 Calculate $y = x^n$

Require: $n \geq 0 \vee x \neq 0$
Ensure: $y = x^n$
1: $y \Leftarrow 1$
2: **if** $n < 0$ **then**
3: $X \Leftarrow 1/x$
4: $N \Leftarrow -n$
5: **else**
6: $X \Leftarrow x$
7: $N \Leftarrow n$
8: **end if**
9: **while** $N \neq 0$ **do**
10: **if** N is even **then**
11: $X \Leftarrow X \times X$
12: $N \Leftarrow N/2$
13: **else**[N is odd]
14: $y \Leftarrow y \times X$
15: $N \Leftarrow N - 1$
16: **end if**
17: **end while**

the \label{#label} command inside or just below the \caption{} command. You can then use the label for cross-reference. As an example, consider the chunk label declared for Figure 2 which is fig1. To cross-reference it, use the command `Figure` \ref{fig:fig1}, for which it comes up as "Figure 2".

To reference line numbers in an algorithm, consider the label declared for the line number 2 of Algorithm 1 is \label{algln2}. To cross-reference it, use the command \ref{algln2} for which it comes up as line 2 of Algorithm 1.

Details on reference citations

For citations of references, use Campbell and Gear [1] or [2].

Examples for theorem like environments

The documentclass for springer `sn-jnl.cls` contains 3 styling that you can use to set new default for theorems and proofs type

`thmstyleone` Numbered, theorem head in bold font and theorem text in italic style
`thmstyletwo` Numbered, theorem head in roman font and theorem text in italic style
`thmstylethree` Numbered, theorem head in bold font and theorem text in roman style

For mathematics journals, theorem styles can be included as shown in the following examples.

Theorem 1. *Example theorem text. Example theorem text. Example theorem text. Example theorem text. Example theorem text. Example theorem text. Example theorem text. Example theorem text. Example theorem text. Example theorem text. Example theorem text.*

To add labels and subheadings, use LaTeX notation

Theorem 2 (Theorem subhead)**.** *Example theorem text. Example theorem text. Example theorem text. Example theorem text. Example theorem text. Example theorem text. Example theorem text. Example theorem text. Example theorem text. Example theorem text. Example theorem text.*

Other environments are proposition, example, remark, definition, proof and quote

Sample body text. Sample body text. Sample body text. Sample body text. Sample body text. Sample body text. Sample body text. Sample body text. Sample body text.

Proposition 3. *Example proposition text. Example proposition text. Example proposition text. Example proposition text. Example proposition text. Example proposition text. Example proposition text. Example proposition text. Example proposition text. Example proposition text. Example proposition text.*

Sample body text. Sample body text. Sample body text. Sample body text. Sample body text. Sample body text. Sample body text. Sample body text. Sample body text.

Example 1. Phasellus adipiscing semper elit. Proin fermentum massa ac quam. Sed diam turpis, molestie vitae, placerat a, molestie nec, leo. Maecenas lacinia. Nam ipsum ligula, eleifend at, accumsan nec, suscipit a, ipsum. Morbi blandit ligula feugiat magna. Nunc eleifend consequat lorem.

Sample body text. Sample body text. Sample body text. Sample body text. Sample body text. Sample body text. Sample body text. Sample body text. Sample body text.

Remark 1. Phasellus adipiscing semper elit. Proin fermentum massa ac quam. Sed diam turpis, molestie vitae, placerat a, molestie nec, leo. Maecenas lacinia. Nam ipsum ligula, eleifend at, accumsan nec, suscipit a, ipsum. Morbi blandit ligula feugiat magna. Nunc eleifend consequat lorem.

Sample body text. Sample body text. Sample body text. Sample body text. Sample body text. Sample body text. Sample body text. Sample body text. Sample body text.

Definition 1 (Definition sub head)**.** Example definition text. Example definition text. Example definition text. Example definition text. Example definition text. Example definition text. Example definition text. Example definition text. Example definition text.

Additionally a predefined "proof" environment is available. This prints a "Proof" head in italic font style and the "body text" in roman font style with an open square at the end of each proof environment.

Proof. Example for proof text. Example for proof text. Example for proof text. Example for proof text. Example for proof text. Example for proof text. Example for proof text. Example for proof text. Example for proof text. Example for proof text. Example for proof text.

□

Sample body text. Sample body text. Sample body text. Sample body text. Sample body text. Sample body text. Sample body text. Sample body text. Sample body text.

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Topical subheadings are allowed. Authors must ensure that their Methods section includes adequate experimental and characterization data necessary for others in the field to reproduce their work. Authors are encouraged to include RIIDs where appropriate.

Ethical approval declarations (only required where applicable) Any article reporting experiment/s carried out on (i)˜live vertebrate (or higher invertebrates), (ii)˜humans or (iii)˜human samples must include an unambiguous statement within the methods section that meets the following requirements:

1. Approval: a statement which confirms that all experimental protocols were approved by a named institutional and/or licensing committee. Please identify the approving body in the methods section
2. Accordance: a statement explicitly saying that the methods were carried out in accordance with the relevant guidelines and regulations
3. Informed consent (for experiments involving humans or human tissue samples): include a statement confirming that informed consent was obtained from all participants and/or their legal guardian/s

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Discussions should be brief and focused. In some disciplines use of Discussion or 'Conclusion' is interchangeable. It is not mandatory to use both. Some journals prefer a section 'Results and Discussion' followed by a section 'Conclusion'. Please refer to Journal-level guidance for any specific requirements.

Conclusion

Conclusions may be used to restate your hypothesis or research question, restate your major findings, explain the relevance and the added value of your work, highlight any limitations of your study, describe future directions for research and recommendations.

In some disciplines use of Discussion or 'Conclusion' is interchangeable. It is not mandatory to use both. Please refer to Journal-level guidance for any specific requirements.

Supplementary information. If your article has accompanying supplementary file/s please state so here.

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- Ethics approval
- Consent to participate
- Consent for publication
- Availability of data and materials
- Code availability
- Authors' contributions

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Section title of first appendix

An appendix contains supplementary information that is not an essential part of the text itself but which may be helpful in providing a more comprehensive understanding of the research problem or it is information that is too cumbersome to be included in the body of the paper.

For submissions to Nature Portfolio Journals please use the heading "Extended Data".

References

[1] Campbell SL, Gear CW. The index of general nonlinear DAES. Numer Math. 1995;72(2):173–196.

[2] Slifka MK, Whitton JL. Clinical implications of dysregulated cytokine production. J Mol Med. 2000;78:74–80. https://doi.org/10.1007/s001090000086.