Additional file 1: Completed Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist

Developed from:

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Guide questions/description</th>
<th>Reported on Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Domain 1: Research team and reflexivity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Personal Characteristics</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Interviewer/facilitator</td>
<td>Which author/s conducted the interview or focus group?</td>
<td>Page 6</td>
</tr>
<tr>
<td>2.</td>
<td>Credentials</td>
<td>What were the researcher’s credentials? E.g. PhD, MD</td>
<td>Page 6</td>
</tr>
<tr>
<td>3.</td>
<td>Occupation</td>
<td>What was their occupation at the time of the study?</td>
<td>Page 6</td>
</tr>
<tr>
<td>4.</td>
<td>Gender</td>
<td>Was the researcher male or female?</td>
<td>Page 6</td>
</tr>
<tr>
<td>5.</td>
<td>Experience and training</td>
<td>What experience or training did the researcher have?</td>
<td>Page 6</td>
</tr>
<tr>
<td></td>
<td><strong>Relationship with participants</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Relationship established</td>
<td>Was a relationship established prior to study commencement?</td>
<td>Page 6</td>
</tr>
<tr>
<td>7.</td>
<td>Participant knowledge of the interviewer</td>
<td>What did the participants know about the researcher? e.g. personal goals, reasons for doing the research</td>
<td>Page 7</td>
</tr>
<tr>
<td>8.</td>
<td>Interviewer characteristics</td>
<td>What characteristics were reported about the interviewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic</td>
<td>Page 6</td>
</tr>
</tbody>
</table>
### Domain 2: study design

#### Theoretical framework

- **9. Methodological orientation and Theory**
  - What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis

#### Participant selection

- **10. Sampling**
  - How were participants selected? e.g. purposive, convenience, consecutive, snowball

- **11. Method of approach**
  - How were participants approached? e.g. face-to-face, telephone, mail, email

- **12. Sample size**
  - How many participants were in the study?

- **13. Non-participation**
  - How many people refused to participate or dropped out? Reasons?

#### Setting

- **14. Setting of data collection**
  - Where was the data collected? e.g. home, clinic, workplace

- **15. Presence of non-participants**
  - Was anyone else present besides the participants and researchers?

- **16. Description of sample**
  - What are the important characteristics of the sample? e.g. demographic data, date

#### Data collection

- **17. Interview guide**
  - Were questions, prompts, guides provided by the authors? Was it pilot tested?

- **18. Repeat interviews**
  - Were repeat interviews carried out? If yes, how many?

- **19. Audio/visual recording**
  - Did the research use audio or visual recording to collect the data?

- **20. Field notes**
  - Were field notes made during and/or after the interview or focus group?

- **21. Duration**
  - What was the duration of the interviews or focus group?

- **22. Data saturation**
  - Was data saturation discussed?

- **23. Transcripts returned**
  - Were transcripts returned to participants for comment and/or correction? N/A – transcripts were not returned.
<table>
<thead>
<tr>
<th><strong>Domain 3: analysis and findings</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Data analysis</strong></td>
<td></td>
</tr>
<tr>
<td>24. Number of data coders</td>
<td>How many data coders coded the data?</td>
</tr>
<tr>
<td>25. Description of the coding tree</td>
<td>Did authors provide a description of the coding tree?</td>
</tr>
<tr>
<td>26. Derivation of themes</td>
<td>Were themes identified in advance or derived from the data?</td>
</tr>
<tr>
<td>27. Software</td>
<td>What software, if applicable, was used to manage the data?</td>
</tr>
<tr>
<td>28. Participant checking</td>
<td>Did participants provide feedback on the findings?</td>
</tr>
<tr>
<td><strong>Reporting</strong></td>
<td></td>
</tr>
<tr>
<td>29. Quotations presented</td>
<td>Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number</td>
</tr>
<tr>
<td>30. Data and findings consistent</td>
<td>Was there consistency between the data presented and the findings?</td>
</tr>
<tr>
<td>31. Clarity of major themes</td>
<td>Were major themes clearly presented in the findings?</td>
</tr>
<tr>
<td>32. Clarity of minor themes</td>
<td>Is there a description of diverse cases or discussion of minor themes?</td>
</tr>
</tbody>
</table>
Additional file 2: Topic guide (at-risk participants)

RA/Systemic health

- When were you first told about your risk of arthritis? CCP+ test?
  - How did you receive this news?
  - Do you understand what this risk means?
- What do you understand by someone having RA?
  - Do you have family members with RA or any experience of RA?
  - Do you have any symptoms? If so what? E.g. joint pain
  - What is the impact on your life/if any? E.g. fatigue
- Have your health priorities changed since you found out you were at risk of developing RA?
- Could you describe your top 5 health priorities since CCP+ test?
  - What about your teeth and gums?
  - How important is this?

What do you understand around the link between gum disease and RA? Have you ever heard about a link before?

Barriers and facilitators for keeping your mouth healthy?

- Do you feel you have healthy teeth and gums?
  - If not- why?
  - What makes you think that?
    - Is there anything you would like to change/would you like to improve your teeth and gums?
- What do you do regularly to look after your teeth and gums?
  - At home? Cleaning/flossing/diet etc. how/when/how often
  - Seeing dentist/hygienist? how/when/how often
- Has any of this changed since you were told of your risk of RA?
- Does anything get in the way of you looking after your teeth and gums and/or visiting dentist?
  - Health issues
  - Dexterity in hands
  - Other commitments (work/family) and time
  - Are you a regular attender at the dentist?
  - Do you have a dentist? Can you get to the dentist?
  - Is cost an issue at the dentist or for making any of the suggested changes to the way you look after your teeth and gums?

Acceptability of periodontal care in treatment plan of individuals at risk of developing RA

- Knowing that there is a link between your gums and developing RA do you think you should be offered help with this?
  - How would you want that help? What’s the main challenge for you?
  - At home – remembering/cleaning/flossing
  - Better toothbrush or other things to use at home
• Getting a dentist? Getting to a dental appointment?
• Cost of dentist? Cost of getting to a dentist?
• Advice from rheumatology team?
• Further information? From who? And how want it – verbal/written/app?

**Shared risk factors**

Have you heard about any other links with developing RA?

- Are you aware of the effect of smoking on your health in particular your mouth
  - What about the link with developing RA?
  - What do you think about help with stopping smoking being offered as part of the study?
- Are you aware of the effect that your diet and gut bacteria has on your health?
- What about the link that your diet and gut bacteria has to developing RA?
- Would you also be willing to change your diet following advice from a health professional, take a prescribed supplement (purified yoghurt) or an antibiotic to reduce your risk?

**Factors influencing your participation in the research project**

**Knowledge of and weighing up pros and cons of preventative intervention**

- What encourages/would encourage you to participate in a study that would provide dental and in particular gum treatment with a view of potentially helping your joints (Caveat)
  - Pain free treatment
  - Resolving your pain
  - On-off appointment vs longer-term treatment
  - Would gender of the dentist influence your decision
- What would be the main challenge for you to taking part in such a study?
  - Anxiety – Of dentist? Treatment? Pain? Discomfort?
    - Types/cause/experiences
    - Specific fears
    - Onset
    - Coping Strategies
  - Barriers to care if any
    - Language/cultural difficulties
    - Fear/embarrassment
    - Time commitment

What could we do to overcome these challenges and encourage you to take part?
Additional file 3: Topic guide (healthcare professional participants)

**Introduction**

- Introduction to the study
- Explain about confidentiality and recording

**What is your current healthcare role?**

**What are your thoughts about the link between oral and general health?**

**In your experience is there any/enough collaboration between medicine and dentistry?**

**Can you think of any examples of areas where there could be more collaboration between medicine and dentistry? How about MDT meetings having a DCP input?**

**What do you think are the main challenges of working more collaboratively between medicine and dentistry?**
- Would it be important/necessary?
- Is it happening already? If yes, is it enough? If no, why not?
- What would make it easier?
- What is your individual experience?

**Have they ever told the patients that there is a link?**
- Communicate about the risk?

**What is the problem?**

**Do you see any utility to engage with patients about prevention?**
- Would this new understanding help motivate patients?

**Why the diabetes commissioning guide not being used?**

**What opportunities do you see?**
- for including periodontal care in treatment plan of individuals at risk of developing RA
- Would you do it?
- How?

**What are the main barriers and facilitators for care provision in this group from your perspective**
- What would make a difference from your perspective?
- Would non-inferiority with a pharmacological intervention make a difference? For policy, integrated care pathway?
- What about prevention?
Additional file 4: Example of coding tree (Theme 2, subtheme 2)

- External barriers
  - Access (NHS)
    - Can't access
    - Short appointments
  - Cost
    - Not going
    - Going less
    - Maintenance