# Summary

Due to an interest in pursuing a career in dentistry, I investigated how the consumption of sugar led to dental decay and what processes can be implemented to both repair the decay and to avoid it in the future. As stated by Dr Huang from Adelaide Paediatric Dentistry, this topic is “extremely relevant but unfortunately often neglected by society, [despite the fact it] has very significant effects on children and their families”.

I used a wide range of processes to gain the information needed to answer the question including

* Accessing websites
* Reading newspaper articles
* Contacting experts and emailing interviews
* Read books and encyclopaedias
* Obtaining journal articles from State Library databases and reading written PDF reports
* Watching videos

My outcome was in the form of a written report which summarised my findings and suggested solutions to the problem of dental decay.

Word count: 140

# Evaluation of Processes – E1

Preliminary research of internet sites helped me discover which topics are currently prominent. Websites were advantageous as they provided a large range of easy-access information and helped fill in holes in the research. They were useful in confirming the reliability of other sources in the systematic review. The websites I used were quite recent and often had links to sources meaning relevant key findings were discovered. Limitations of webpages were that often the findings were unreliable or written by people with limited topical understanding. Often no date or author was recorded on the site, suggesting an unreliable source. Overall, internet webpages were a useful process as they gave a range of information and furthered the research by giving generic key findings.

Books were useful, reliable sources as they are reviewed and edited prior to publishing. The authors I referenced were well educated and credited. Small bias was shown in the book by Dr Stoppard and some of the information presented as facts were more opinions. For example, she instructed “never give a child a bottle of undiluted or sweetened juice”, something which, as shown by other sources, is unnecessary if good oral hygiene is being applied following the consumption of the undiluted drink. However, she has had great experience in the field and may have discovered from her study that this contributes significantly to caries (cavities). This source was not specifically about children's oral health which meant there were few key findings; rather there were small sections throughout the book which could be found through careful reading. However, this was also extremely useful as any key findings which were discovered were about the health of children, this being main topic of the book. In summary, this source and books in general were a good way to get reliable information to fill in gaps in the research and to solidify the key findings made in other sources.

Newspapers gave current, reliable key findings. However, often they provided little detail, as the information is written for the public and needs to be easily understandable. The article quoting Dr Dunn gave statistics, reasons for the increase in decay, and tips for good dental health, but gave no information on “to what extent does sugar affect deciduous teeth…”. Additionally, all the information was generic; nothing specific to children. Overall they gave little new information but helped substantiate and back up key findings.

Interviews were the most useful process as specific questions could be asked to gain a greater understanding and to find leads. They helped the research as experts could give current and relatively reliable information. Disadvantages of interviews were that they were potentially biased and unreliable. However, the interviews were sent to dentists with either much experience, such as Dr Hunter, or a lot of tertiary education in the dentistry field, such as Dr Allen. As Dr Hunter has worked as a dentist for about twenty years, his response helped my research by giving key findings specific to the second half of my question (“what oral hygiene practises can be implemented to reduce the effect”). He gave good tips and suggestions but also personal examples or trends that he has observed over his life. Dr Allen, having recently completed paediatric dentistry, gave a lot of detailed information into the biology of the first part of my question (“to what extent does sugar affect children’s teeth”). In summary, this process was the most useful for the research as it gave a lot of information, it filled in gaps in the research which were otherwise difficult to fill, and it opened up pathways and leads for my research and my question.

Journal articles and PDFs added highly reliable, peer reviewed key findings to the research. The State Library database gave access to many different documents meaning highly relevant articles could be found. These sources also introduced new vocabulary and opened up leads in the research. One article gave deeper suggestions to why decay has been increasingly prominent in children, and another suggested the best methods for avoiding it. Disadvantages of the journal articles was the technical language used which targeted a higher educated audience meaning further research was required to understand. Overall, peer-reviewed documents increased the technicality of my key findings by providing a higher level of information.

A systematic review helped condense my information and cross reference key findings. I organised the key findings for each source into various categories for each section of my research question. This helped identify which information was consistent throughout the sources, and any outlying information which suggests either unreliability, or greater detail. When extra detail was found, such as Dr Allen’s information regarding the specific bacteria involved in dental decay, my key findings were developed and deepened due to the extra research which had to be done to confirm it.

Word Count: 802

# Evaluation of decisions made – E2

When conducting interviews, I decided to send them via email rather than performing a face-to-face interview. This was a good decision because the interviewees were able to think about, talk about and potentially research the questions before replying with an answer, and hence the results were possibly of greater reliability than if the person was put on the spot. For some interviewees, I telephoned them before sending a confirmation email to ensure I had been in touch with them before asking the questions, which potentially meant a higher chance they would reply. Emailing rather than a verbal interview was also very useful as I was able to easily send the questions to many people, without having to find a time and place to conduct the interview. This meant I received five replies from the nine people I sent the questions to. Overall it was a good decision, as it meant that there was more information about the same topics which could be cross referenced to make the key findings more reliable.

Another decision I made was to send the questions to a broad range of people in the dentistry fields. Sending it to dentists, hygienists and dental nurses meant that they gave good evidence for their answers from their personal experiences in the dentistry field. Paediatric dentists’ gave answers specifically regarding children's teeth which were more relevant to the question. I also sent the interviews to people studying dentistry in University or just-graduated dentists, such as Dr Allen. They helped the research by giving reliable, detailed descriptions as to the biological and scientific side of my research and by giving technical language to further my vocabulary and to increase the formality of my research. In summary, this decision beneficial as I gained information on the same topics but from various points of view, adding depth to my research.

Word Count: 308

# Evaluation of quality of research findings – E3

The research question itself was answered reasonably well overall although the depth of detail was basic due to limited understanding and experience in the area. To be able to answer the first part of my question in full, it would require a large amount of knowledge on the biological and scientific side of dentistry. A large amount of experience and interaction with patients in the dentistry field is needed to be able to answer the second part of my question completely, although this can never be fully, as new ways to increase good oral hygiene are being discovered every day.

Overall, the research was good, although some areas of the question were unanswered or only explored lightly. Specifically, how sugar leads to caries in children was discovered in detail, but not “to what extent” and what biological factors decrease and increase this.

The research would improve by examining further the question from a biological point of view and not just a humanistic point of view. In other words, it would be beneficial to look more on the physical and chemical side of how caries form and can be fixed in detail, rather than just the societal aspect and how environmental and behaviour factors can be altered to improve dental health. For example, researching how to reverse the fermentation process performed by the bacteria which results in decay would increase the detail. Tertiary educators in the dental faculty or those involved in research could be interviewed to discover this. The second part of my question (“… what oral hygiene practises can be implemented to reduce the effect”) would be improved by observing these findings through work experience or placement.

Overall, my outcome is of little or no use to others as my understanding is basic and very little, and the information used was not necessarily reliable due to limited sources. If more primary sources were used, such as through first-hand experience, or interviewing people in other relevant areas, this would increase the reliability and usefulness of my research. My outcome was intended as a summary and beginning to the topic and, although will be of little use to the well-educated, will be useful for parents or those wanting a small amount of knowledge of why good oral health is important for their children. It will furthermore be of use to me as some basic background knowledge if I pursue a career in dentistry.

Word Count: 402

Total word count: 1512