



2018/19 CANDIDATE RECORD FORM, PRODUCTION LOG AND ASSESSMENT RECORD

INTERNATIONAL INDEPENDENT PROJECT QUALIFICATION (9690)

Please attach the form to your candidate's work and keep it at the centre or send it to the moderator as required. The declarations should be completed as indicated.

Centre number	Centre name
94384	Riverbank College
Candidate number	Candidate's full name
64793	Jessica Bailey

Work submitted for assessment **must** be the candidate's own. If candidates copy work, allow candidates to copy from them, or cheat in any other way, they may be disqualified.

Candidate declaration

Have you received help/information from anyone **other than** your supervisor (include specialist consultant if relevant) to produce this work?

☒ No ☐ Yes (give details below or on a separate sheet if necessary).

Please list below any books, leaflets or other materials (eg DVDs, software packages, internet information) used to complete this work **not** acknowledged in the work itself. Presenting materials copied from other sources **without acknowledgement** is regarded as deliberate deception.

N/a

From time to time we use anonymous examples of candidates' work (in paper form and electronically) within our guidance materials to illustrate particular points. If your work appears in Oxford AQA Exams materials in this context and you object to this, please contact us and we will remove it on reasonable notice.

I have read and understood the above. I confirm I produced the attached work without assistance other than that which is acceptable under the scheme of assessment.

Candidate signature	Date 5 th January 2017
---------------------	-----------------------------------

Supervisor declaration

I confirm the candidate's work was conducted under the conditions laid out by the specification. I have authenticated the candidate's work and am satisfied (to the best of my knowledge) that the work produced is solely that of the candidate.

Supervisor signature	Date 5 th January 2017
----------------------	-----------------------------------

Candidate number	Candidate's full name
64793	Jessica Bailey

Submission checklist

To be completed by the supervisor

International Independent Project working title	Should amalgam be used as a suitable dental filling?
International Independent Project final title	Should amalgam be used as opposed to other common dental fillings?

Please note that failure to complete or submit a compulsory element may result in a mark of zero being awarded.

Select/tick	Items that must be included	Notes
<input checked="" type="checkbox"/>	1. A signed and completed <i>Candidate record form, production log and assessment record</i>	This document. All pages must be completed.
<input checked="" type="checkbox"/>	2. Research based written report	Must be 5,000 words in length (+/- 10%).
<input checked="" type="checkbox"/>	3. Evidence of a presentation within the <i>production log</i>	Presentation on the project process and findings/conclusions.

Candidate number

64793

Candidate's full name

Jessica Bailey

The taught skills element

To be completed by the supervisor

Outline details of taught skills

Record here details of relevant skills taught in a class/group and details of relevant skills taught individually to this candidate as described in the specification eg your scheme of work. Continue on a separate sheet if necessary.

- Students received a half- day session at the University Library. Here they were taught about how to access the library, the variety of resources available, and British Library Loans.
- Students had access to an online 'Survival guide', produced by the teacher in charge of the IPQ. This included information on the following: What to do first, action planning, researching, organising the project, drafting it. editing it, referencing and a guide to the formal presentation.
- Students also had online access to exemplar materials, and department ideas for projects.
- Students had weekly lessons where the skills element was addressed.
- The course materials were available through the schools VLE - a PowerPoint presentation for each lesson. The list of topics covered is given below.
- The IPQ textbook was used as guidance throughout the course
- After study leave the students returned to an IPQ fortnight where presentations took place and time was available to complete all other

TOPICS COVERED:

- Introduction to IPQ Role of the supervisor Writing skills
- How to research - using the internet and other secondary sources. Source analysis. Referencing Thinking skills. Reading skills
- Primary data, HGS archive
- Managing your project- diary, Gantt, PERT, Time management
- Project ideas and things to avoid introducing the production log
- Look at some examples of completed projects
- Record of initial planning intro
- Preliminary literature review
- Aims and objectives
- Making a general plan
- Planning review
- Writing fluently and critically
- The introduction
- The method
- Mid project review
- Findings and discussion
- The conclusion
- Editing the draft

Candidate number

64793

Candidate's full name

Jessica Bailey

Record of grade

To be completed by the supervisor

Grades must be awarded in accordance with the instructions and criteria in the specification.

Has the student done the following:

Identified and selects an area of interest.	<input checked="" type="radio"/> Yes	<input type="radio"/> No
Set a working title.	<input checked="" type="radio"/> Yes	<input type="radio"/> No
Undertaken a risk assessment.	<input checked="" type="radio"/> Yes	<input type="radio"/> No
Produced a project plan.	<input checked="" type="radio"/> Yes	<input type="radio"/> No
Implemented the project plan and documents any changes to it.	<input checked="" type="radio"/> Yes	<input type="radio"/> No
Produced a report addressing the selected final title.	<input checked="" type="radio"/> Yes	<input type="radio"/> No
Used a referencing method.	<input checked="" type="radio"/> Yes	<input type="radio"/> No
Communicated findings in the report and the presentation.	<input checked="" type="radio"/> Yes	<input type="radio"/> No
Created a bibliography/reference list.	<input checked="" type="radio"/> Yes	<input type="radio"/> No
Evaluated the strengths and weaknesses of the project.	<input checked="" type="radio"/> Yes	<input type="radio"/> No

If you answered "No" to any of the above, the student must be awarded a Grade U. If all answers are "Yes" proceed to the Grading section below.

Grading

Which grade descriptor is the project most like? (circle one)

A

If you selected A, is the project an A, or is it better (A*)?
(circle one)

A* **A**

C

If you selected C, is the project a C, or is it better (B)?
(circle one)

B **C**

E

If you selected E, is the project an E, or is it better (D)?
(circle one)

D **E**

If you selected E above, as a final check, is the project worthy of a pass (E) as opposed to a fail (U)?
(circle one)

E **U**

Candidate number

64793

Candidate's full name

Jessica Bailey

Record of grade (continued)

To be completed by the supervisor

Summary information to show how the grades have been awarded should be given in the spaces below in addition to comments in other pages of this document and any supporting information in the form of annotations on the candidate's work.

Assessment objectives	Supervisor's supporting statement
AO1: Selection of topic	There is a clear aim in the Record of Initial Ideas but the approach is less clear and The Part A Candidate proposal is sparse. Some primary research conducted - interview with a dentist and questioning of people leaving a dental surgery - however, how many and what responses not recorded.
AO2: Planning, monitoring and developing	The Planning Review is brief. Very few signs of strategic planning or systematic monitoring, other than a little in the report. Project development is limited – e.g. Mid-Project Review mentions a change to the title, though to what is not recorded. Evidence of decision-making hard to find, because of the brief nature of Production Log entries. The Project Product Review is very general. Some relevant additional evidence can be drawn from the appended 'monthly diary'.
AO3: Demonstration of research skills	Some information from sources was acquired and reviewed. There is a twelve-source bibliography, however two of these are 'anon' and some of dubious origin. The appended source evaluation lacks rigour, e.g. frequent comment is 'non-profit organisation' - are all such reliable – or biased?
AO4: Analysis and application of research	Material in the report is relevant but not particularly well structured or communicated. Whilst the report shows that some information was acquired, reviewed and somewhat analysed, there was a tendency to quote just one source rather than attempting to draw together the views on amalgam versus alternatives. The report was not well argued - it did not systematically identify the pros and cons of each type of filling to come to an evidence-based conclusion. The report concluded that amalgams should still be used, but most of the evidence considered was anecdotal. However, the main aim is addressed and there is some synthesis between primary and secondary material. The report is referenced to the entries in the bibliography.
AO5: Evaluation of product, process and self	The Reflection is somewhat brief, but does identify a surprisingly wide range of skills developed. We will have to take the candidate's word on this; evidence to support it is not strong. Evaluation rather stronger in the presentation. Overall, evaluation is relevant but rather simplistic in places.

Candidate number

64793

Candidate's full name

Jessica Bailey

Record of grade (continued)

Supervisor's concluding comments

This meets E descriptor, just. The Production Log is generally rather brief and there is limited evidence of the development of the project throughout. The report does address the main aim, though the approach taken is rather limited, repetitive and poorly structured. There is a sense, towards the end of the report, that the student is attempting to 'fill space'. However, a mixture of research is conducted and directed towards the main aim.

Internal moderation comments if appropriate

Supervisor declaration

I confirm that no work assessed for the award of the grade above is also to be submitted, or has been submitted, for any other accredited qualification(s).

Supervisor signature

Date

18th December 2016

Candidate number

64793

Candidate's full name

Jessica Bailey

Record of initial ideas

To be completed by the candidate

This page records initial meeting(s) with your supervisor to agree your project ideas. Additional pages can be submitted if more than one idea has been explored.

My idea(s) for topic/title:

Should amalgam be used as a suitable dental filling?

Comment [A1]: AO1 – reasonably clear initial aim.

My preliminary research and development of my project ideas:

Dentists have used amalgam for many years until recently where the drawbacks were analysed and substitutes were put in place. However, amalgam is used still by selected dentists. I wish to study dentistry at university and this topic therefore will extend my A-level courses. People always want straight teeth and it is a very high-demand market thus new materials and substitutes are always being researched and produced so I have done research of the different types of fillings up to 2015.

Comment [A2]: AO1 - Preliminary research mentioned, but not identified.

I plan to research my project by making reference to:

- use google scholar as a reliable source of information
- interview dentist students and professionals in the field of dentistry

My summary of the comments and advice from my supervisor (and specialist consultant if applicable):

During my first meeting with my supervisor some feedback and comments made were that;

- The essay must contain enough pros and cons of amalgam and the different types of fillings as to avoid the essay being biased and one sided.
- Furthermore one main piece of advice is that there should be enough sources to show that a variety of sources were used and all points made from each were used analytically and compared with each other enough to come to a conclusion.
- it was suggested I should carry out a risk assessment for when I do my interviews with dentist students and professionals and also my survey.

Modifications I have made as a result of my discussion with my supervisor (and specialist consultant if applicable):

Following the discussion that I had with my supervisor, I have taken into great consideration the idea of being able to write a sufficient amount to fill the required amount for the IPQ project. To add to this it was suggested to use google scholar as a search engine rather than google to refine my results to more reliable results. I believe my essay will evolve and change as I work on it in more depth therefore I believe I have acquired a foundation title which can be tweaked to make it more tailored so it can cater to a better essay. I will write a risk assessment for my project.

My proposed title, aims and objectives:

Should amalgam be used as a suitable dental filling?

Comment [A3]: AO2 – limited evidence (at this stage) of how the student intends to approach the title. Project aims only communicated in broad statements.

Date 10th January 2016

Candidate number

64793

Candidate's full name

Jessica Bailey

Part A: Candidate proposal

To be completed by the candidate

Working title of my International Independent Project.

Present the topic to be researched in the form of a short statement/question/hypothesis with clear focus.

Should amalgam be used as opposed to other dental fillings?

Comment [A4]: AO1/2 – slight change to title. No justification given.

My initial resources will be

To allow me to carry out this task more manageably I am going to focus on the amalgam filling and a few other substitutes which are used today by common dentists. I have some survey questions which I propose to ask people affiliated with the profession, students studying dentistry and dentists themselves. This will allow for a wide variety of my own data and raw information which I can implement in my essay.

Comment [A5]: AO3 – Such primary sources are relevant, but no specific text-based secondary sources mentioned at this stage.

The courses of study or area(s) of personal interest to which the topic relates

I study chemistry and biology and so the topic chosen offers personal interest whilst allowing me to apply knowledge gained to my subject areas.

My project aims and objectives

I propose to focus on fillings commonly used by dentists whilst evaluating them all and comparing them with amalgam.

Comment [A6]: AO2 – Planning is still rather brief here. Certainly no evidence of a strategic approach, more of an outline at best.

Provide details of the courses that you are currently studying

Qualification type	Awarding body and subject
eg A-level, IB, Modern Apprenticeship, BTEC	eg AQA Mathematics, OCR Computing, WJEC English
A-level	Chemistry
A-level	Biology
A-level	Economics

Qualification type	Awarding body and subject
A-level	RE

Notice to candidate You must not take part in any unfair practice in the preparation of project work required for assessment and you must understand that to present material copied directly from any book or any other sources without acknowledgement will be regarded as deliberate deception. If you use or attempt to use any unfair practice you will be reported to Oxford AQA Exams and you may be disqualified from **all** subjects.

Candidate declaration

I certify that I have read and understood Oxford AQA Exams Regulations relating to unfair practice as set out in the notice to candidates above.

Candidate signature

Date 7th February 2016

Candidate number

64793

Candidate's full name

Jessica Bailey

Part B: Supervisor's comments on candidate proposal

To be completed by the supervisor

Please comment below on the validity and feasibility of the candidate proposal (Part A) as an International Independent Project.

	Supervisor's comments
Indicate the relation to, and development/extension outside of, the main course(s) of study or interest.	Chemistry and biology A Level links. Interest in dentistry for university choice.
Comment on the suitability of the proposed initial sources and research base.	If sources can be contacted and reliable info gained early on. Be very clear in your planning and gain permission.
Confirm that the project is feasible in the proposed timescale and/or indicate any potential difficulties that may prevent the candidate from meeting the Assessment objectives.	Feasible if this wide variety of sources available.
Comment on the suitability of the proposed title, aims and objectives.	Plenty of source analysis and evaluation.

Comment [A7]: Note – more could be said here, eg about the lack of initial specific (secondary) sources mentioned

Comment [A8]: Note – again, rather brief. The supervisor should say a little more about the lack of specific objectives relevant to the title/main aim.

Supervisor signature

Date 9th February 2016

Candidate number

64793

Candidate's full name

Jessica Bailey

Part C: Centre coordinator's approval of candidate proposal

Supervisor's name

Trevor Knight

To be completed by the centre coordinator

If you are acting as both the centre coordinator and the supervisor, please seek counter signature from a senior colleague.

Centre coordinator's comments on the feasibility and acceptability of the proposal (parts A and B) as an International Independent Project Qualification.

A clear topic and title that should enable you to analyse and evaluate.

Make sure you have a clear plan of action – what will you do when?

Keep a source analysis table in order to evaluate your sources and references clearly.

Comment [A9]: Note – particularly good advice, given the lack of detailed planning thus far.

☒ Approved

☐ Approved subject to the implementation of the centre coordinator's recommendations

☐ Resubmission required

Centre coordinator's name

Samual Woodward

Centre coordinator signature

Date 11th February 2016

Candidate number

64793

Candidate's full name

Jessica Bailey

Planning review

Comment [A10]: Note – this page is poorly completed – very little detail is given regarding the planning of the project.

To be completed by the candidate

This page records your outline plan once your proposal has been approved.

My next steps in planning, researching and deadlines that I will set myself. What I intend to do, by when, what resources I will use and how I will implement the recommendations of the centre coordinator (where appropriate).

To continue my research I propose to speak and interview people already skilled in the field of dentistry such as current dentists and dental students at university to become familiar with the topic and gain some primary research which I can incorporate into my essay.

Comment [A11]: AO2 – this is not saying anything new.

The reasons for my decisions.

It will be good to talk to dentists and dental students given their expertise in the field.

My summary of the comments and advice from my supervisor (and specialist consultant if applicable).

Need to add when the actual IPQ will be started and with reference to sub-headings and to have a clear plan so the essay is structured.

Modifications I have made as a result of my discussion with my supervisor (and specialist consultant if applicable).

Made a detailed plan, and read through the guidelines on moodle.
Started IPQ over Easter.

Comment [A12]: AO2 – still little evidence of planning at this stage.

Please append any relevant planning documentation or tools that you have used.

Date 7th March 2016

Candidate number

64793

Candidate's full name

Jessica Bailey

Mid-project review

To be completed by the candidate

This page records your outline plan when you have completed your research.

Is my project following my original plan? How has my plan developed?

Success – I was able to alter my essay title question to something more precise which can be more easily analysed. I carried out an investigation which collected data which I could then go on to use in my analysis and conclusion.

Comment [A13]: AO2 – Evidence of some development/decision making, though details of the change (including justification) not mentioned.

Failures – lacking findings in primary sources as I would like to have more to allow for more reliable information.

My summary of the comments and advice from my supervisor (and specialist consultant if applicable).

I need to find and gather a variety of primary and secondary sources so that there will be enough information to evaluate with. Advice on how to start my introduction as I was struggling with it at this point.

Modifications I have made as a result of my discussion with my supervisor at this stage (and specialist consultant if applicable).

I added a detailed introduction and started my main body paragraph argument. I did more research which allowed me to add a selection of primary sources to my source table which I could then incorporate into my essay.

Comment [A14]: AO3 – reference to new sources, but little/no justification for their selection.

My final title, aims and objectives.

Should amalgam fillings be used as opposed to other common dental fillings?

My planned next steps to achieve my project's aims and objectives.

Continue to write my report, making sure to draw on my primary sources.

Please append any relevant planning documentation or tools that you have used.

Date 6th May 2016

Candidate number

Candidate's full name

64793

Jessica Bailey

Project product review

To be completed by the candidate

This page records the near completion of your project product. Outline the successes, failures, additions and/or changes you made as you followed the plan in your mid-project review.

Did my project follow my revised plan from the mid-project review?

Successes – was able to stay focused on the question set throughout the essay and not get sidetracked. Held a strong argument throughout and didn't have it one sided. Avoided procrastination so that the project was completed before the deadline.

Failures – could have managed time better so that I would have had more time during the 2 week IPQ week allocated.

Comment [A15]: AO2 – Monitoring seems rather contradictory here....

My summary of the comments and advice from my supervisor at this final stage (and specialist consultant if applicable).

Make sure everything is finished including source table and diary log. Add more primary sources so the argument can be strengthened even more and the essay will be more analytical.

Modifications I have made as a result of discussion with my supervisor (and specialist consultant if applicable) at this final stage.

Do I need to do anything else to complete my project?

I looked through articles and books which would help my argument and also increased the variety of sources I had and added them to source table however I didn't use them in my essay and explained why I didn't in the source table.

Comment [A16]: AO3 – secondary sources mentioned, but not specifically.

Please append any relevant planning documentation or tools that you have used.

Date 9th September 2016

Candidate number

64793

Candidate's full name

Jessica Bailey

Presentation record part A

To be completed by the candidate

This page records your presentation and its preparation.

Planned format of my 10 minute presentation (eg audience, use of visual aids, slides, use of notes, etc).

I made a PowerPoint presentation consisting of 9 slides. Each had information regarding my topic and how to improve next time.

I will use visual aids in order to keep the evidence engaged so not to lose their interest.

Planned content of my presentation.

- **Project process:**

What my topic is and why I chose it/why it is important to me.

What sources I used in terms of primary and secondary and assessed their credibility.

- **Project findings and conclusions:**

What went well and what I learned/successes.

Problems I encountered.

What advice I would give to others.

Modifications I have made as a result of rehearsal and/or discussion with my supervisor (and specialist consultant if applicable):

Upon rehearsing my presentation and finding that I was having problems, reading it fluently, I added cue cards with bulleted pointed information so to re-jig my memory so that I didn't stutter my words. I also reduced the amount of words on each slide so that it wasn't too much for the audience to read.

Date 28th September 2016

Candidate number

Candidate's full name

64793

Jessica Bailey

Presentation record part B

To be completed by the supervisor

Record and comment below on the delivery of the presentation.

	Supervisor's record/comments
The nature of the audience should be a minimum of two adults including supervisor (include numbers of staff, students and others present).	IPQ supervisor and 2 other students.
The nature of the presentation (include use of notes, use of display items, and use of presentation software).	PPT presentation and speak notes.
Comment on the content and delivery of the presentation (for example clarity of ideas, structure of presentation, pace, engagement with audience).	Good strong delivery

Comment [A17]: Note – this is rather brief. The supervisor should provide more detail.

Please append any relevant planning documentation or tools that you have used.

Candidate number	Candidate's full name
64793	Jessica Bailey

Presentation record part B

To be completed by the supervisor

Record and comment below on the delivery of the presentation.

Comment on the response of the candidate to questions that demonstrated understanding and grasp of the project and/or its production. Give examples of five questions asked and answers given.	1. What problems did you encounter and how did you solve them? Timing – not planned for exams. Word count – very specific title.
	2. What have you learned about your own learning? Cramming isn't the best option – not as stressful and more organised.
	3. What were your successes? Finished and spoken about it. Great interview notes and quotes.
	4. What advice would you give to others undertaking a similar project? Time management. Plan, don't cram – clear headings to stay structured. Start earlier and use books.
	5. How did you get to your conclusion? Google scholar.

Comment [A18]: Note – it appears the supervisor has used a pre-prepared list of questions. This is not helpful to the student because they do not get a chance to show the depth of their specific understanding of the topic they have chosen. All of these questions are about the process. Supervisors should aim for a mixture of questions that address the process AND the report content/findings.

<div style="border: 1px solid black; padding: 5px; width: 350px; display: inline-block;">Supervisor signature</div>	Date <u>4th October</u>
---	-------------------------

Candidate number	Candidate's full name
64793	Jessica Bailey

Summary and reflection

To be completed by the candidate

This page records your summary, reflection and evaluation when you have completed your report and given your presentation.

Some questions you may wish to answer in this section include, what have I learned from completing this project? What new knowledge or expertise have I enjoyed or found valuable? What are the strengths and weaknesses of my project (including planning and organisation)? What skills have I improved? What changes would I make if I undertook such work again? What advice would I give to others undertaking such a project?

My project centered around the topic of dentistry and whether amalgam, a previously commonly used dental filling should be used as opposed to alternative fillings. The main content of my project required me to carry out an investigation to determine the nature and durability of different types of fillings from the patients point of view.

I was able to conclude that amalgam is the better filling and should be used. As a result of me analysing and evaluating a selection of primary and secondary resources, I was able to come to this conclusion. The main reason being amalgam's ability to stand the test of time and also being a cheap and easily applicable filling for the dentist as opposed to the substitutes: composite resin, and glass isomer filling.

I have learned a lot about my chosen topic upon completing this project, as well as organisation skills, time management and analysis skills. From having to complete the project solely by myself, I have gained educational independence and learned how to use my time effectively without having a series of pre-planned time periods for each section.

Upon using the harvard referencing style for the first time it has helped me to prevent plagiarism in the future whilst also in the process helping me to learn how to evaluate and analyse sources effectively.

Changes I would make would definitely have a pre-planned schedule of what I am going to do and when so I am not rushing at the last minute and stressing over the momentous workload. In this way the schedule would help me stay on task and motivated so that the project may be completed to the best of my ability.

I would say to others to definitely plan early and have a clear outline. I would also say to choose a topic which interests them to make the project more enjoyable, as I did.

Comment [A19]: Note – this is the first time that the approach taken to the title/aim is mentioned in the Production Log – a sign of limited planning.

Comment [A20]: AO4 – A reasonable summary of the outcome, that addresses the main aim/title.

Comment [A21]: AO5 – the development of a range of skills is mentioned/identified

Comment [A22]: AO4 – Relevant points, but somewhat simplistic in nature.

GET HELP AND SUPPORT

Visit our website for information, guidance, support and resources at oxfordaqaexams.org.uk

You can contact the IPO team directly;

E: IPQ@oxfordaqaexams.org.uk



OXFORD INTERNATIONAL AQA EXAMINATIONS
LINACRE HOUSE, JORDAN HILL, OXFORD, OX2 8TA
UNITED KINGDOM
enquiries@oxfordaqaexams.org.uk
oxfordaqaexams.org.uk

Permission to reproduce all copyright material has been applied for. In some cases, efforts to contact copyright-holders may have been unsuccessful and Oxford International AQA Examinations will be happy to rectify any omissions of acknowledgements. If you have any queries please contact the Copyright Team, AQA, Stag Hill House, Guildford, GU2 7XJ.

- Some evidence of planning in the first paragraph of the report (AO2)
 - Material in the report is relevant but not particularly well-structured or communicated (AO4)
 - Not particularly well argued and lacking in a systematic approach (AO4)
 - Some analysis and synthesis but limited (AO4)
 - Simplistic referencing (linked to bibliography) and the sources are dealt with rather simplistically, rather than in a holistic way. (AO4)
- Candidate number:

Should amalgam fillings be used as opposed to other common dental fillings?

The area I have chosen to discuss for my EPQ project centres around dentistry and whether amalgam, a previously commonly used dental filling which was used to repair cavities, should be used as opposed to other more modern dental fillings which are said to be more environment friendly and safer. Amalgam is also referred to sometimes as a silver filling and is a mixture of metals and alloys, the main alloy ^{is} ~~been~~ mercury which comprises 50% of the filling. This is where the study centres and I will research through different authors and studies to come to a conclusion whether amalgam should be used again as opposed to its substitutes. I have selected this topic as I aspire to study dentistry at university and therefore feel choosing a topic related to this field will help me to further my understanding and gain an insight into the field of expertise. This study aims to test this hypothesis by using a selection of primary and secondary sources to analyse the advantages and disadvantages of different fillings and come to an overall conclusion and also comparing the views with my own.

Literature review

Amalgam is a dental filling which was commonly used on patients until recent 2008 where Sweden, Denmark and Norway deliberated the ban of mercury due to the mercury alloy within the filling which caused health issues in patients within whom the amalgam had been implemented. Amalgam was the most common, if not the only, filling used by dentists until its popularity diminished and so other fillings were used as substitutes which were seen as more safe and self-accommodating. The common alternatives to amalgam are composite resin fillings and glass isomer cement fillings both of which are modern fillings which suggest they are improving in strength. My title centres on if amalgam should be brought back and used as by dentists as opposed to other fillings and there is a lot of debate on the topic with different sources holding different opinions.

The main issues seen with amalgam are that it is thought to be a health issue and can cause diseases. One key disease that is often linked to amalgam usage is Autism spectrum disease in which the key developmental stages of the brain are affected. A study has shown that women with six or more amalgam fillings were three times as likely to have children with severe autism. Source one shows an article explaining how the mercury alloys in amalgam can "*risk kidney disease or neurological and psychological effects such as Alzheimer's, Parkinson Disease or Multiple Sclerosis*". This opposes the argument that amalgam should be used as a dental filling as it poses a threat to lives and although there is no concluding evidence, there is also speculation that the mercury could stunt the development of brain activity in children who have the filling. However there is no substantial evidence to conclude this claim.

Whilst undertaking work experience at a dental practise, I asked the dentist on his opinion of amalgam and other commonly used fillings. Dr B agreed with the opinions given in source one, however he also believed amalgam usage should not be completely dismissed, rather used in moderation and in cases where a health risk is not posed. This is because some of the advantages of amalgam, for example the cheaper cost and ability to obtain amalgam more readily, seem to outweigh the disadvantages. To add to this, he said that *"upon been implemented the filling lasts longer and it is possible for adverse effects to be removed by removing the filling at a later stage and using a high suction tool to remove any traces of the mercury so that the diseases will not be able to develop"*. The author of source 2, the U.S. department of health and human service agrees with both source 1 and Dr B's view outlining the benefits and potential risks of amalgam as a filling. From this we can deduct that amalgam is a substance, which should be used at the dentist's discretion, in moderation. I agree with both views outlined above but critically deduce that the best outcome would be for the patient receiving the treatment to decide whether they want the amalgam filling or a substitute. Therefore it can be said that amalgam should be used but only at the patient's permission because it is them who will be receiving the possible side effects.

However, it can be said amalgam should be eradicated completely as not only are the patients affected, but the dentists are too who are exposed to the mercury regularly. Source 3 gives an article from google scholar, a reliable source that explains exposure to mercury and the inhalation of it can cause lung problems in older life for those administering the filling therefore precautions need to be taken i.e. using alternative filling materials. However a solution to this would be to use a capsule where all the alloys of amalgam would be added and spun to make a solid filling. This is safer and less toxic to the dentist however to some, still poses a major threat.

The most common substitute tooth fillings are:

- Composite resin fillings (CRF)
- Glass isomer cement filling (GICF)

Modern technology has been able to make a composite resin filling composed of ceramic and plastic compounds. Source 4 outlines how the CRF is able to mimic appearance of natural teeth thus is more desirable by patients and due to modern technology it is able to be made stronger. However the author says in the source that although the CRF is more modern, amalgam is a better substitute as a filling due to its ability to *"stand the test of time"* where it is quoted and research studies show it to have a life span of 20 years+. Amalgam fillings seem to last longer than alternative materials because they consist of a metal alloy, which by nature is bacteriostatic. This means that it is very hard for the bacteria in your mouth to live around an amalgam filling because the metal makes them sick. This makes it harder for another cavity to develop under the amalgam filling, which helps the

filling last longer; hence it is a better long term filling. To add to this amalgam is cheaper and more easily obtainable therefore making it more feasible for dentists to use as opposed to CRF's. Composite fillings can cost up to 2 or 3 times more than the typical silver filling hence for these reasons lower budget dental practises that are still in the starting process use amalgam to keep costs low and prevent overspending. **Source 5** goes into more detail as to how the filling is applied and explains why the cost is high but also points out its advantages such as its aesthetics and structure thus the patient may choose the composite filling over the amalgam. During the bonding procedure where the doctor is placing the filling, the tooth needs to be kept as dry as possible. Any water introduced will retard the gluing of the filling into place and reduce the overall longevity of the filling. In certain circumstances, such as bleeding gums or hard to reach locations, if a filling cannot be kept dry long enough, then an amalgam filling is a better, longer lasting choice. In my opinion when choosing over the two types of fillings, I think amalgam shouldn't be used as opposed to CRF because although the CRF wears out easily, they can be replaced regularly and the patient doesn't need to worry about getting a disease. However in the same source (5) it talks about disadvantages and how drinking tea or coffee would decolourise the filling making it look less aesthetically pleasing. In addition to this the filling can cause "postoperative sensitivity" and so it may be preferred to receive the amalgam filling fitted to avoid the discomfort whilst been applied.



Amalgam Fillings



Composite White Fillings

This image shows how the amalgam and composite filling differ looks wise and shows why people may prefer the composite over the amalgam due to its colour.

The other common dental filling is glass ionomer cement filling which is composed of aluminosilicate glass powder and a liquid polyacrylic acid. These two substances give a natural teeth look but lack the translucency. It also bonds well to the tooth and sits well in places where there have been erosion and decay however the filling is not faultless as it lacks sufficient strength to bear long term chewing hence giving it low wear resistance, **Source 6**. The dental surgeon who was interviewed by myself about amalgam as a filling was also asked about the common alternatives and their effectiveness. The findings found that the GICF was the best alternative however he found that patients were coming back after a short time without the filling having it come out due to its low wear resistance so he was having to re-apply the filling which is more costly and time consuming putting the composite resin as the preferred option. For this reason most dental surgeries would prefer to use the composite resin due to its higher resistance ability and I agree as after researching and

reading studies talking about both, it is evident that the CRF is used more and the GICF is only used in situations where the CRF is not available.

Regarding the project title, on the information studied and mentioned so far in the essay, it can be deduced that amalgam should be used as opposed to other fillings.

This is due to most of its properties been of a higher standard to that of CRF and GICF including its higher strength and ability to stand the test of time. "Dental amalgam fillings are strong and long-lasting, so they are less likely to break than some other types of fillings". This is an extract from source 2 which supports the idea of having amalgam fillings fitted.

Contrast to this source 8 is an article written by Dr Tom McGuire who is one of the leading authorities on mercury amalgam fillings. In it he mentions how 80% of the mercury vapour released from amalgam fillings is inhaled, readily passes through the lungs into the bloodstream and then enters into and is stored in the body. As it accumulates, it poisons cells and tissues throughout the body, particularly the brain and nervous system. This gives an opposing argument to the use of amalgam as in the long term despite its many advantages its one main disadvantage is its very controversial in terms of using the filling on patients when they do not know the full extent of what the outcome could offer.

Methodology

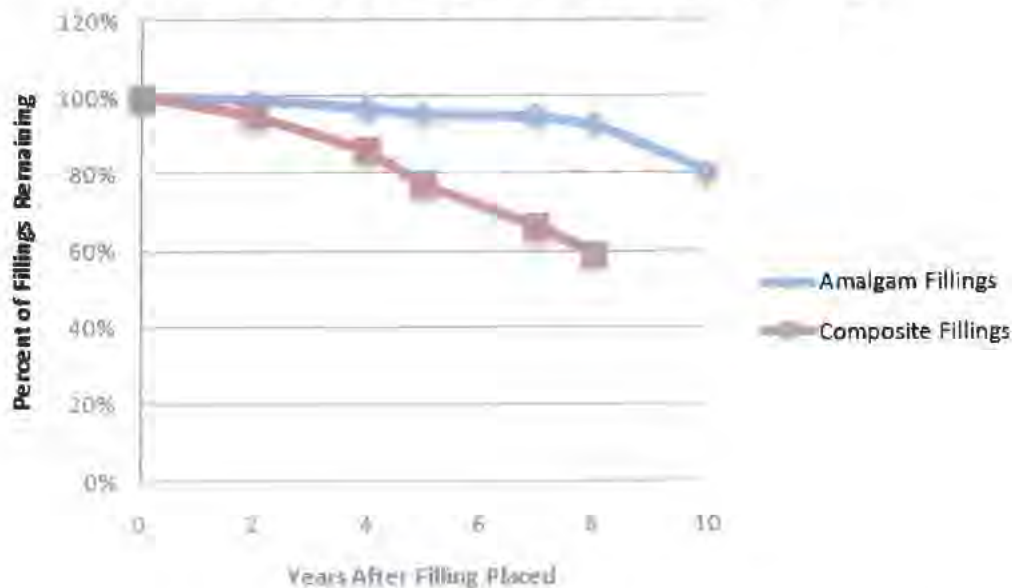
Regarding my investigation I collected a selection data of primary and secondary resources. This was obtained by reading studies and journals regarding the topic of dental fillings. However the internet web brought up thousands of search pages so it would have been impossible to register and integrate all the information thus using the skill of skim reading which we learnt in EPQ lessons, I was able to read through web searches quickly without wasting too much time. This gained me a collection of secondary sources which I used selectively in my essay to help me conclude an overall conclusion. With these I also had a primary source which was a dentist surgeon. I formally interviewed him and with a series of questions relating to my topic and used the results to compare with other views and link in the ideas with my own. However because my topic was very specific and concise It was difficult to find the information in books and magazines which was rateable thus meant I had to study sources carefully so not to use much irrelevant information. To add to this my research consisted of an investigation where I'd ask dental patients about their fillings and how they felt with them. This gave me primary data which I could use to compare fillings with each other and allowed me to analyse information obtained and compare with my own opinion and experience to come to an overall conclusion. I decided to stand outside a dental surgery and ask the people who walked out so that it was not biased. I also asked the dentist what kind of fillings were applied so that I knew a general outline of the treatment the patients were receiving. However I only asked at one dental surgery and so the results could be an anomaly, thus the investigation needs to be carried out at more dental surgeries to increase reliability.

Upon gaining my primary and secondary sources I had to choose how to use them effectively. The primary sources and information obtained by myself were very reliable as the information was collected myself hence no chance of the source been or changed. On the other hand the journals and articles collected from the internet were secondary resources making them unreliable as they could have been changed or the author may have written false information. In this way it is important that the sources are checked thoroughly and all information I included in my essay was all relevant and not To add to this it was difficult trying to find newspaper articles and extracts from magazines which related to my topic thus I looked more at online journals to get an idea of other peoples personal opinions on the fillings which i could incorporate into my essay.

Discussion of findings

From my findings I have observed that many patients had come back to the dental surgery with their fillings having come out. These fillings were not the amalgam but its substitutes.

A Comparison of Amalgam and Composite Fillings



This image was pulled from [source 9](#) and proves my findings in that the amalgam not only lasts longer but has better resistance as proven in the graph as more of the filling remains than the composite filling. Composite (plastic) fillings are also softer in nature than amalgam (metal) fillings. Because of this they tend to wear down faster in those who grind their teeth. Composite fillings also need to be kept clean and require regular brushing and flossing, otherwise they tend to develop a new cavity along their edges. Amalgam fillings are more forgiving in this aspect. If a cavity starts to form along its edge the silver tarnishes and helps seal out the bacteria, making it harder for the bacteria to dig deeper. However amalgam fillings will still experience recurrent cavities if not cared for properly as well. This helps me make a better judgement about the filling as its data lines up in accordance with my investigations findings about the composite filling needing replacement therefore I can

deduce the amalgam would be a more suitable dental filling option however the negatives need to be taken into account.

I also found that whilst amalgam has been praised in every aspect, it gives major health issues and the FDI World Dental Federation as well as numerous dental associations had to place caution on the filling ^{been} used hence banning its use in certain countries where the health issues were thought to be ^{spiking}. This meant that regardless of all amalgams advantages people were concerned of the long term defects along with the dentists handling the mercury within the filling every day thus it became less commonly used. This is when substitutes started ^{been} manufactured and used on a large scale basis however after years of having them implanted people saw common problems with them and so many dentists wanted to revert back to amalgam to save money and cover the costs of having to replace composite resins often for patients. **Source 10** outlines many of composite and glass ionomer's disadvantages such as not being able to bond hard to dental tissue.

It was evident that whilst the GICF and CRF both thrived in every aspect aesthetically, except they wore easily and it was common for patients to find them coming loose or be chipped out as a result of chewing. Hence I found people had to make extra trips to the dentist and the dentist had to spend more money on fillings as replacements therefore it was evident both parties would prefer a filling which lasts longer and was more stable for convenience and money expenses. Therefore many would opt for the amalgam filling and within my research I found that now instead of amalgam being handled by dentists themselves there are now capsules which mix the amalgam alloys and mercury together itself preventing any sort of contamination. Amalgam has served dentistry well, and continues to do so. Overall, amalgam restorations demonstrate an excellent life expectancy and are considered to be the least technique-sensitive direct restoration which is why, they should be the first filling choice.

Conclusion

Overall after looking at all the findings and research, it can be deduced that amalgam should be used as opposed to alternative dental fillings. This is because of the primary evidence which is a dentist with his own practise saying himself that amalgam should be used. He says that although there are negative consequences, there is no hard evidence proving these theories but other scientists can confirm it is true as it has been proved to be consequences of doses of mercury close to the brain for a long period of time. Furthermore my investigation backs up my conclusive statement of amalgam ^{being} a better filling than its common substitutes because many of the patients had claimed they have had to have their fillings replaced due to erosion at least once. Some also mentioned that a more permanent resistant filling would have been preferred (amalgam) for convenience of not having to come back to the dentist for a replacement as often. This therefore supports my conclusion; however there is a weakness to my investigation in that it is a small sample size and so the results are not representative. This means that more people need to be asked the same questions but on a larger scale so to gain more reliable results and the

conclusion statement can be supported strongly. For this reason I was not able to fully achieve what I set out to and so the argument was mainly based on opinions and other research studies where my investigation only played a small part in due to its small sample size.

Based on what I have already mentioned, I recommend that for future research more people would be interviewed on their experience with which ever filling they have. Also I would say that asking experts on the topic matter about each filling and their views on it to gain a selection of primary research would allow for a stronger sided argument based on their arguments and allow for a more convincing conclusion. Moreover I would say using more un-biased sources of information such as books would give a better range of findings and could be used more flexibly as opposed to sources which have to be checked for liableness from e.g. google.

Reflecting back on the project I would say that had I started earlier on in the year with a more clear and outlined plan, my overall essay would have been completed in shorter time and would have been executed with less stress about not meeting the deadline. However regardless I would say I performed quite well given the time period and was able to complete all the tasks successfully before the deadline up to what I think is a high standard. If I were to do the project again I would do a few things differently one ^{being} ~~been~~ having a structured plan and dates for when I had to complete a certain amount of words by. This would make me more organised and increase productivity. I would also go out and try gain more primary information from sources so I would be able to incorporate the information into my project which would make for a stronger debate and a more decisive conclusion.

"Should amalgam be used as opposed to other dental fillings?" Yes I think they should because of their ability to stand the test of time and cheap applicableness. With the development of modern day technology, modern amalgam is formulated with different alloys in a capsule so that dentists don't have to worry about mixing up mercury with other metals by hand hence they are now safer to be handle and if the patients are educated of the filling beforehand, it should be allowed providing they are well informed. Until another alternative is made widely available on the market, with all the benefits plus low cost of a dental filling, I believe amalgam proves to be the best possible filling for both the patient and dentist.

Bibliography & references

- (1) Anon, (2015). [online] Available at: Sources <http://ec.europa.eu/health/opinions/en/dental-amalgam/l-2/6-conclusion-health-effects.htm#1> [Accessed 25 Jun. 2015].
- (2) Fda.gov, (2015). *About Dental Amalgam Fillings*. [online] Available at: <http://www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/DentalProducts/DentalAmalgam/ucm171094.htm> [Accessed 25 Jun. 2015].

- (3) Mackert, J. (1997). Mercury Exposure From Dental Amalgam Fillings: Absorbed Dose and the Potential for Adverse Health Effects. *Critical Reviews in Oral Biology & Medicine*, 8(4), pp.410-436.
- (4) Deltadentalins.com, (2012). *Dental amalgam or resin composite fillings? - Delta Dental*. [online] Available at: https://www.deltadentalins.com/oral_health/amalgam.html [Accessed 25 Jun. 2015].
- (5) Knowyourteeth.com, (2015). *Know Your Teeth - Infobites - What is a Composite Resin (White Filling)? -- Search By Keyword, Letter or Phrase - 1-877-2X-A-YEAR (1-877-292-9327)*. [online] Available at: <http://www.knowyourteeth.com/infobites/abc/article/?abc=f&iid=286&aid=1241> [Accessed 25 Jun. 2015].
- (6) Toothclub.gov.hk, (2015). *Oral Health Care Zone for Grown-upss - Oral Treatments - Filling*. [online] Available at: http://www.toothclub.gov.hk/en/en_adu_01_06_01_01b.html [Accessed 25 Jun. 2015].
- (7) Anon, (2015). [online] Available at: <http://medind.nic.in/taa/t05/i2/taat05i2p158.pdf> [Accessed 25 Jun. 2015].
- (8) Dentalwellness4u.com, (2015). *Chronic Fatigue Syndrome and Amalgam Fillings*. [online] Available at: <http://dentalwellness4u.com/mercurydetox/chronicfatiguesyndrome.html> [Accessed 25 Jun. 2015].
- (9) Which Type of Filling Lasts Longest, W. (2011). *Amalgam Fillings | Oral Answers*. [online] Oralanswers.com. Available at: <https://www.oralanswers.com/category/amalgam-fillings/> [Accessed 25 Jun. 2015].
- (10) Shenoy, A. (2008). Is it the end of the road for dental amalgam? A critical review. *J Conserv Dent*, 11(3), p.99.
- (11) Dentalhealth.org, (2015). Oral treatments and dental health › Sundry › Different filling materials | The British Dental Health Foundation. [online] Available at: <https://www.dentalhealth.org/tell-me-about/topic/sundry/different-filling-materials> [Accessed 25 Jun. 2015].
- (12) iaomt.org, (2015). Amalgam vs. Composites. [online] Available at: <https://iaomt.org/TestFoundation/amalgamvscomposites.htm> [Accessed 25 Jun. 2015].
- (13)

Sources	Title/Authors	Date Published	Information	Useful?	Biased/Reliable?
http://ec.europa.eu/health/opinions/en/dental-amalgam/1-2/6-conclusion-health-effects.htm#1	Scenhr and scher Tooth filling materials: amalgam and dental alternatives	Published in 2008 Secondary source	Talks about scientific evidence backing up health risks associated with amalgam. Gives some insight into the alternatives but no real analysis of them	Yes,	Non-profit organisation
http://www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/DentalAmalgam/ucm171094.htm	Data provided and written by u.s. department of health and human services. About dental amalgam fillings	Feb 2015 Secondary source	Information on what dental amalgam is. Benefits and potential risks and talks about exposure to the mercury alloys effects.	Yes,	Non-profit organisation Article published recently so reliable as data will be upto date.
http://cro.sagepub.com/content/8/4/410.abstract	JR Mackert – journal Mercury Exposure From Dental Amalgam Fillings: Absorbed Dose and the Potential for Adverse Health Effects	1997 secondary source	A review of how mercury can affect a person from the authors point of view having graduated from medical school thus knowing in depth about the topic.	Yes,	Non-profit organisation Obtained from google scholar so reliable source.
https://www.deltadentalins.com/oral_health/amalgam.html	Article written by organisation with no name of author given. Dental amalgam or resin: composite fillings?	March 2012 Secondary source	Gives information already obtained from other sources however gives additional information on composite filling and insight into the type of substitute.	Yes,	Non-profit organisation

http://www.knowyoururteeth.com/infobites/abc/article/?abc=f&iid=286&aid=1241	Academy of general dentistry What is a Composite Resin (White Filling)?	June 2015 Secondary source	Information into how alternative filling is placed and the pros and cons with it	Yes,	Non-profit organisation Written by learned authors
http://www.toothclub.gov.hk/en/edu_01_06_01_01b.html	N/A Oral treatments	N/A Secondary source	Gives detailed information into all types of fillings comparing them with each other. This allowed me the use of good source analysis and evaluation.	Yes,	Non profit organisation
http://medind.nic.in/taat05/i2/taat05i2p158.pdf	P Nagaraja Upadhya and Kishore G Glass Ionomer Cement – The Different Generations	January 2005 Secondary source	Detailed journal/article about second most common dental filling. Gives a lot of information which I was able to incorporate into essay including cost, application and aesthetics of filling	Yes,	Non profit organisation written by dental science students so reliable.
http://dentalwellness4u.com/mercurydetox/chronicfatiguesyndrome.html	Tom McGuire Chronic Fatigue Syndrome, Chronic Mercury Poisoning & Amalgam Fillings	2014 Secondary source	List of possible effects of mercury exposure. Also talks about the symptoms but most information already been read elsewhere	No, only useful as background knowledge but not used in topic as already mentioned	Non profit organisation

https://www.oralanswers.com/category/amalgam-fillings/	N/A What is an amalgam filling	Mar 2011 Secondary source	Modern day filling amalgam how it is made. More on amalgam which has already been researched.	Limited use as most of the information already mentioned.	Non-profit organisation
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2813106/	A Shenoy Is it the end of the road for dental amalgam? A critical review	2008 Secondary source	Gives a lot of information and evaluation about amalgam which helped me make a conclusion. Also gives more info on the durability of amalgam.	Yes,	Journal written on author's opinion. Non-profit motives.
https://www.dentalhealth.org/tell-me-about/topic/sundry/different-filling-materials	British dental foundation different filling materials	2015 Secondary source	Information on different types of fillings. Information is limited but helps with the background information which I can then expand on.	Yes,	Reliable author. Non-profit organisation
observations, (1998). amalgam vs composite resin.	Newspaper article written by Gordon J Christensen Amalgam cs. Composite resin: 1998	Published in 1998 Secondary source	Talks about amalgam and composite resin and pros and cons of each. Tells reader what to be aware of with both types of filling.	Useful information as a background source to boost my knowledge of filling but didn't incorporate information into project.	Reliable as article from google scholar. Non-profitable organisation so no intent to be biased.
https://iaomt.org/TestFoundation/amalgamvscomposites.htm	Dr. Gary Indications for amalgam vs. composite	N/A Secondary source	Gave information of comparing amalgam with composite filling but not isomer filling thus limited use.	Limited use	Reliable author who is a doctor. Non-profit organisation

Doctor interviewed by myself	Dr b	2015 Primary source	Very useful as primary information which I could mostly incorporate into my essay. Also been a experienced dentist gave best information all relevant based.	Yes,	Reliable as information gathered myself from a primary source.
------------------------------	------	------------------------	--	------	--

Source Analysis

Monthly diary

24/9/14

- During our beginning EPQ lessons we learnt skills such as how to organise and manage time effectively. This was to increase our capacity to plan ahead so that a clear structure could be made. I benefitted from these lessons as I was able to initially conceive a plan as to how I would allocate my time for my EPQ.

01/10/14

- During this lesson of EPQ we learnt about the C.R.E.A.M. strategy and how to use it. (creative,reflective,effective,active,motivated) this made our reading and writing skills better and allowed us to analyse information more effectively. It enabled me to pick out key parts of information in text and utilise that efficiently

15/10/14

- Continued working on writing skills and planning first ideas of what essay will be centred on. Gained tips from supervisor about arguing in the essay and how to summarise big pieces of information to keep it concise.

22/10/14

- Got taught research techniques to receive the best and most reliable information. Learned difference between primary and secondary sources and how to incorporate relevant pieces of information into the essay.

3/12/14

- Mock exams were close so most of my attention was focused to revising and preparing for them. However in hour lesson our attention was brought to plagiarism by the teacher so that we were aware about not copying other people's information which would cause the EPQ to lose marks.

7-13/1/15

- After mocks were finished Started drafting ideas and brainstorming what interests me. I eventually came to the conclusion I would write my essay on something to do with dentistry as that is what I want to do in further education and an area which interests me greatly.
- This led me to my project proposal part A where I drafted a question and gave ideas on why and the stages which brought me to that question. It eventually landed me on the question set which I wanted and so
- Upon getting my proposal checked during the same month I started making an outline of my source table on Microsoft word so that I could just add sources as I go along.

February

- When my project proposal part C came back, having my title been approved I was then able to start my research and become familiar with my different fillings and apply that knowledge to making a short draft.
- At the same time of researching from books and the internet I added the links to my source table so that I could talk about them when it came to the essay and also to provide evidence of my research. More sources would also mean I could evaluate and analyse more information as there is more information available.
- Visit to L University for additional information on how to use the advanced search engine and also access to the library with vast amounts of information with guaranteed studies on the chosen topic.

March

- At this point I started my plan and structure of the essay. Although it wasn't as detailed I hoped it be, I continued with the research information.
- During March was also our final CAT's hence I had to focus my efforts more towards revising for the tests.
- Also started revision for AS exams thus more focus was toward that rather than EPQ.

April

- At this point we had a 2 week Easter break and I started writing my introduction for the essay. This was to use my time effectively so I would not be panicking at the last minute.
- I also adjusted my title and changed the wording to be more fitting for the topic I was discussing.
- Continue with production log and wrote mid project review. Also kept at the same time kept adding sources to my sources table and filling in the columns with detailed explanations of how I used them and if I incorporated them into my project.

May

- Exam period started so all efforts on my EPQ were projected toward revising for exams. This meant stopping all production on EPQ until exams were finished except for the hour lesson period we had allocated where I continued adding to my introduction in the essay and also started on my literature review. This helped me get ahead so that when I went back to finishing my project in June, there wouldn't be as much to do so I wouldn't be as stressed.

June

- Exams were all over and I started my EPQ straight away to get it finished. Went to L library to get some books and journals to aid me with my EPQ.
- Completed the essay during the 2 week time period we had allocated for EPQ and upon finishing, started preparation for my presentation which I would pitch to my supervisor giving an overview of my topic.

Candidate number:

- Carried out my presentation and with the feedback from my supervisor I was able to finish my production log.



**Should amalgam be used as
opposed to other dental
fillings?**



Why was this topic chosen

- ▶ I chose this topic as it centres around dentistry which is what I aim to study in higher education.
- ▶ It is a topic which can look favourable on my university application and also provides a personal insight into the field of dentistry which I can use.



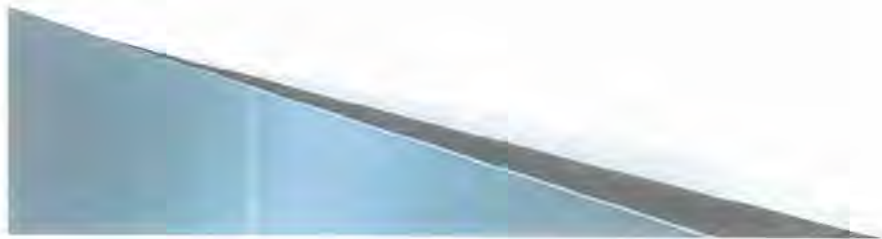
Findings and conclusions

- ▶ Amalgam is a better alternative to other fillings because it is more feasible and stands a better test of time in comparison to the alternatives such as a composite resin filling.
- ▶ However I also found that some research studies claimed to say that it can cause adverse health issues and so may not be the best filling for children under 6 whom are more vulnerable to the mercury alloys than others.



What went well

- ▶ Obtaining primary sources – having a qualified dentist in the family meant I could obtain a set of reliable information which I could use in my project as a source.
- ▶ Not having to change plans during the project – due to a pre-prepared outline, I was able to write the project without having to go back to make many major changes.



What didn't go well

- ▶ Timing – due to exams and other reasons, I kept leaving my essay off which gave me less and less time to do it, meaning I had to spend a long time on it each day which was more strenuous.
- ▶ Filling the word count limit which was set – because my topic was quite precise it meant there wasn't a broad spectrum to write about thus making it difficult to write 5000 words on the subject.



Advice to others

- ▶ Time management – make a clear precise plan and stick to it. It will help you stay focused and keep motivated
- ▶ Set goals – clear objectives which can be met so that you won't be stressing out towards the end.
- ▶ Choose something which interests you – a topic which you are interested in will motivate you more and drive you to finish the project rather than think of it as a chore.



Thank you for listening



And are there any questions



Appendix

Risk assessment dentist interviews and survey

Risk	Who could be affected?	Severity	Likelihood	Risk rating	Control measures
The dentists I interview do not understand the purpose of my interview. This is an ethical risk.	The Dentists.	Medium	Low	Low	I will write to the people I want to interview and I will explain why I want to interview them and how I will use their answers.
The survey I plan to use is not ethical.	The people taking part in my survey.	High	Low	Low	I am going to use the information I have learned in taught skills about how to write a good survey and will make sure that the survey explains the purpose of the survey and how the answers will be used.
I get into a difficult situation when visiting the dental students and professionals.	Me. I could be harmed.	High	Low	Low	I will tell my parents and my teachers where I am going. I will give the address and details of the people I am visiting to my teacher and parents. I will make sure I am arranging to meet somewhere public and safe to conduct my interviews. I could take a parent or my older sister with me on these visits.