

CYSF Project Logbook

Abdul S. | Sir Winston Churchill High School | Grade 10

| Date | Progress | Resources |
|--------------|---|---|
| October 7th | <ul style="list-style-type: none"> Completed online college courses about neuroscience to gain background knowledge | edX |
| October 9th | <ul style="list-style-type: none"> Created CYSF Google Drive to organize components Decided on the final research question: "Which brain regions and neurochemicals are most prevalent in romantic love?" Designed background and working title ("Neural and chemical reactions of romantic love') | Google Drive, Docs |
| October 11th | <ul style="list-style-type: none"> Finalized search query for PubMed → ("romantic love"[Title/Abstract] OR "love"[Title/Abstract]) AND ("fmri"[Title/Abstract]) Created inclusion and exclusion parameters for research papers: <p>(Inclusion Criteria:</p> <ul style="list-style-type: none"> Peer-reviewed research examining romantic love using fMRI Available in English Published 2000-2025 Articles that report neurological findings <p>Exclusion Criteria</p> | PubMed TextEditor Learned PubMed features and search from Dr. F. Perry Wilson's online course on medical research |

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| | <ul style="list-style-type: none"> • Studies on love different from romantic love (platonic, familial, etc.) • Studies not using fMRI • Full-text access not available for free • Animal studies • Review or meta-analysis papers) • Identified 73 papers with query • Began designing PRISMA flow summary • Narrowed down to 17 papers during first screening • Gathered list and put it into TextEditor for future reference | |
| October 12th | <ul style="list-style-type: none"> • Created a summary table for use with all selected research papers, including the citation, abstract, method, key research point, sample size, parts of brain prevalent (ROI) and neurochemicals prevalent • Started analyzing the first research paper by Rinne et. al. (2024) • Downloaded the paper and included it in Drive | Google Scholar Docs Drive |
| October 14th | <ul style="list-style-type: none"> • Finished analyzing the first paper • Extracted valuable figures and included in separate Doc | Google Scholar Docs Drive |
| October 16th | <ul style="list-style-type: none"> • Finished online college course about understanding medical research for background knowledge and skills | Coursera |

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| October 19th | <ul style="list-style-type: none"> Analyzed second paper by Eckstein et. al. (2023) Extracted figures Downloaded the paper and included it in Drive | Google Scholar Docs Drive |
| October 23rd | <ul style="list-style-type: none"> Found more papers to exclude, narrowing down to 14 (updated PRISMA) Started analyzing Acevedo et. al. (2020) Extracted figures | Google Scholar Docs Drive |
| October 24th | <ul style="list-style-type: none"> Finished analyzing Acevedo et. al. (2020) Downloaded the paper and included it in Drive | Docs |
| October 25th | <ul style="list-style-type: none"> Found more papers to exclude, narrowing down to 13 papers (updated PRISMA) Analyzed Song et. al. (2015) Extracted figures Downloaded the paper and included it in Drive | Google Scholar Docs Drive |
| November 8th | <ul style="list-style-type: none"> More papers to exclude (narrowed to 12, updated PRISMA) Analyzed Ebisch et. al. (2024) Extracted figures Downloaded the paper and included it in Drive | Google Scholar Docs Drive |
| November 10th | <ul style="list-style-type: none"> Completed an online college course from Johns Hopkins on | Coursera |

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| | neuroimaging to gain background knowledge useful for project | |
| November 27th | <ul style="list-style-type: none"> Started analyzing Langeslag et. al. (2014) | Google Scholar Docs |
| November 28th | <ul style="list-style-type: none"> Finished analyzing Langeslag et. al. (2014) Extracted figures Downloaded the paper and included it in Drive | Docs |
| November 29th | <ul style="list-style-type: none"> Reworked background and working title ("The Neurobiology of Romantic Love: A Systematic Review") Analyzed Poore et. al. (2012) Extracted figures Downloaded the paper and included it in Drive Added new parameter to exclusion criteria ("Studies not using fMRI") | Google Scholar Docs Drive |
| November 30th | <ul style="list-style-type: none"> Began analyzing Acevedo et. al. (2012) | Google Scholar Docs Drive |
| December 13th | <ul style="list-style-type: none"> Continued analyzing Acevedo et. al. (2012) Identified one new paper from sources in paper (bringing total to 13, updated PRISMA) | Docs |
| December 17th | <ul style="list-style-type: none"> Communicated with Ms. Heron about if SWC is registered for | Gmail |

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| | CYSF (yes) and expressing interest | |
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| December 19th | <ul style="list-style-type: none"> Finished analyzing Acevedo et. al. (2012) Extracted figures Downloaded the paper and included it in Drive | Docs |
| December 20th | <ul style="list-style-type: none"> Started analyzing Aron et. al. (2005) | Google Scholar Docs |
| December 21st | <ul style="list-style-type: none"> Continued analyzing Aron et. al. (2005) | Docs |
| December 22nd | <ul style="list-style-type: none"> Finished analyzing Aron et. al. (2005) Extracted useful figures Downloaded the paper and included it in Drive | Docs |
| December 23rd | <ul style="list-style-type: none"> Identified two papers for exclusion (bringing final included papers to 11, updated PRISMA) | TextEditor Docs |
| December 24th | <ul style="list-style-type: none"> Analyzed Fisher et. al. (2006) Extracted useful figures Downloaded the paper and included it in Drive | Google Scholar Docs |
| December 25th | <ul style="list-style-type: none"> Excluded a paper unrelated to romantic love Included a paper from reference list that related to the question Updated PRISMA regarding | Google Scholar Docs |

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| | <p>changes (zero net change in # of papers)</p> <ul style="list-style-type: none"> Started analyzing Bartels and Zeki (2000) | |
| December 27th | <ul style="list-style-type: none"> Finished analyzing Bartels and Zeki (2000) Extracted useful figures Downloaded and uploaded saved paper to Drive | Docs Drive |
| December 28th | <ul style="list-style-type: none"> Ran a quick sanity check on literature notes across all 11 papers using ChatGPT (all clear) Started on the "Methods" section of research paper Finished the "Paper Acquisition" (how I initially found all these papers) and "Inclusion and Exclusion Criteria" (what filters were used to eliminate papers I didn't need) sections | Docs ChatGPT |
| December 29th | <ul style="list-style-type: none"> Finished the "Study Selection Process" section (indicating how I picked out papers for the project) Included PRISMA flow table for easy understanding and visual aid Wrapped up the Methods section | Docs |
| December 31st | <ul style="list-style-type: none"> Created a new document to summarize the functions and relation to love of rain regions that appeared across the papers Summarized the VTA and insular | Docs Wikipedia |

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| | cortex using info from Wikipedia | |
| January 11th | <ul style="list-style-type: none"> • Joined CYSF platform • Updated project info on CYSF platform • Submitted ethics form for project | CYSF Platform |
| January 14th | <ul style="list-style-type: none"> • Summarized amygdala and started caudate nucleus functions with info from Wikipedia for self-reference | Docs Wikipedia |
| January 19th | <ul style="list-style-type: none"> • Summarized putamen, caudate nucleus, and anterior cingulate cortex (ACC) with info online for self-reference | Docs Wikipedia National Institutes of Health (NIH) |
| January 20th | <ul style="list-style-type: none"> • Started the results section of research paper, summarizing the analyzed data to answer the question | Docs |
| January 24th | <ul style="list-style-type: none"> • Finished the results section of the research paper, summarizing the results of consistent brain regions and neurochemicals present in the analyzed studies | Docs |
| February 12th | <ul style="list-style-type: none"> • Finished the first portion of the discussions section summarizing the results | Docs |
| February 22nd | <ul style="list-style-type: none"> • Finished discussion of the VTA and relation to motivation | Docs Citation list |

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| February 24th | <ul style="list-style-type: none"> Finished caudate section of discussion and relation to reward-based learning | Docs Citation list |
| February 27th | <ul style="list-style-type: none"> Finished putamen section of discussion and relation to habit building Created heatmaps of brain using Procreate, indicating which regions appeared most frequently across studies (added to Results section) | Docs Citation list Procreate Google Images |
| February 28th | <ul style="list-style-type: none"> Transferred Methods section from research paper onto the CYSF platform Finished discussion of insula in relation to emotional processing in romantic love | Docs CYSF Platform Citations list |
| March 2nd | <ul style="list-style-type: none"> Transferred Results section to CYSF Platform Uploaded project image and other images required Completed Research section on CYSF platform Completed Problem section on CYSF platform Completed Discussion section and added to the Conclusion section on CYSF platform Completed Citations section on CYSF platform | Docs CYSF Platform Citations list |