# PARTICIPANT INFORMATION STATEMENT

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| **HREC Project Number:** | HRE2023-0599 |
| **Project Title:** | Cancer-related cognitive impairment: Neuropsychological function, neurogenesis biomarkers, and a nonpharmacological intervention (Stage II) |
| **Investigators** | Mr Siddharth Ganesh – Doctoral Candidate<br>Dr Yu Yu – Chief Investigator<br>Dr Blake Lawrence – Co-Investigator |
| **Contact:** | siddharth.ganesh@postgrad.curtin.edu.au (+61 493105286)<br>yu.yu@curtin.edu.au (08 9266 5063) |
| **Version Number:** | v.3.1 |
| **Version Date:** | 16/10/2023 |

## What is the project about?

This study explores cancer-related cognitive impairment (CRCI) in people living with cancer and undergoing treatment. CRCI is the development of thinking and mental deficits associated with cancer and cancer treatments, affecting 30-40% of individuals before treatment and 50-75% during and following treatment (Mayo et al., 2021). CRCI can be associated with poorer quality of life (Janelsins et al., 2018; Mayo et al., 2021), but there are limited treatments mainly due to the lack of understanding on the underlying workings (Oppegaard et al., 2021). As such, further research is required to understand these workings. Previous studies either focussed on overall mental impairment, largely disregarding biological factors (e.g., Janelsins et al., 2018), or vice versa (e.g., Oppegaard et al., 2021), highlighting a gap in literature. Our study will adopt a collaborative approach to explore the connection between mental function and blood factors in people living with cancer. We will then apply a validated brain training treatment informed by recent literature reviews (e.g., Cheng et al., 2022), and clinical trials for similar conditions, such as early dementia (e.g., Kallio et al., 2017; Kang et al., 2019).

This project involves one large study separated into two stages. Stage I includes a cross-sectional assessment of at least 150-180 participants, to create a machine learning model, using factors of mental function (e.g., memory, attention, learning), mood, quality of life, and wellbeing, as well as blood markers, medical history, and personal information. Data collected from Stage I will be used as the baseline to identify a subset of 60-100 participants, who demonstrate deficits in mental domains, for Stage II. You have already completed Stage I of this study.

Stage II will be a randomised controlled trial of cognitive (brain) training to improve CRCI. We hypothesise that cognitive training will improve mental functioning, mood, quality of life, and wellbeing, and potentially revert biological changes associated with CRCI.

**This information sheet and consent form pertain to Stage II of the study.**

**Who is conducting the research**?

The project is being conducted by Siddharth Ganesh, Dr Yu Yu, and Dr Blake Lawrence. The results of this research project will be used by Siddharth Ganesh to obtain a Doctor of Philosophy at Curtin University and is funded by the University and the Commonwealth of Australia. There will be no cost to you for taking part in this research and you will not be paid for taking part.

**Why am I being asked to take part and what will I have to do?**

We are looking for 60-100 people living with cancer and who may be experiencing mental decline (as demonstrated by test scores), that have taken part in Stage I of our study. The eligibility criteria for Stage II are as follows.

| Inclusion Criteria | Considerations |
|---|---|
| - Taken part in Stage I of this study (and have met those criteria)<br>- Have cancer and are undergoing treatment<br>- Have access and ability to use a phone/tablet/computer with internet for six weeks<br>- Scores on tests show probable cancer-related mental decline | - Willing and capable to complete cognitive training as required<br>- Willing and able to come into follow-up appointment |

As determining test score eligibility may take researchers up to one week, interested participants are asked to sign this Stage II consent form at the end of Stage I. Participants that sign this form will be pre-enrolled in Stage II, with full enrolment contingent upon meeting test score eligibility criteria. Once eligibility/ineligibility is ascertained, you will be contacted with this information. At which point, eligible participants will be fully enrolled in Stage II. Please note that pre-enrolment does not guarantee your enrolment nor participation in Stage II.

Stage II entails a six-week long clinical trial of a computerised brain (cognitive) training treatment. Cognitive training tasks may include (but are not limited to): puzzles, games, and word problems. The programme we are using is called Cognifit. Stage II will largely take place in your own home, and you will self-administer the training using your smartphone, tablet, or computer.

You are required to complete a minimum of 120 minutes (2 hours) of training per week, which is a minimum of 720 minutes (12 hours) across the six weeks. The weekly 120 minutes must be completed across four or more training sessions, and each session should be a minimum of 20 minutes. Note that four sessions of 20 minutes do not actually meet the minimum weekly 120 minutes. The actual duration of each session will depend on how many times a week you train. Again, the *base requirement is a minimum of 120 minutes of training per week*. This can be done multiple ways. Some possible examples include (but are not limited to):

- 4 x 30 min = 120 min
- 6 x 20 min = 120 min
- 3 x 20 min + 2 x 30 min = 120 min
- 2 x 20 min + 2 x 25 min + 1 x 30 min = 120 min

You may also train for more than 120 minutes a week. Throughout the six weeks, we will send you reminders to help maintain routine and engagement. Additionally, at the start and end of the six weeks, you will do a 30-minute assessment to help calibrate and evaluate your training. Do these assessments on the day before and the day after the six-week period.

You will be randomly allocated to one of two groups, which will differ in training intensity and type. The allocation will be random, like tossing a coin, and the researchers cannot choose your group. It is important you do not discuss the details of the cognitive training tasks with other people interested in the trial, especially people that you suggest/refer to us. The reason for this is that the programme individualises the training for each person based on their needs.

At the end of this six-week trial, participants will attend a follow-up assessment (90-120 min), mirroring the appointment in Stage I. Ideally, this follow-up will be conducted within one week of completing cognitive training. Once again, this appointment will involve completing multiple thinking and memory assessments, as well as mood, quality of life, and wellbeing questionnaires. Some things you will be asked to do are complete timed tasks, recall information, and answer questions regarding your overall mental wellbeing. Blood samples will be collected again. All these tests are conducted in person. Participants will need to provide any updates to their medical history. This Stage II follow-up appointment will occur at the same place as before – Level 2 clinical suites, Building 305, Curtin University, Bentley. Again, there will be no cost to you for taking part in this research, apart from your time and effort, and you will not be paid for taking part. We will cover parking expenses for your appointment(s) at Curtin.

## NECESSARY AND OPTIONAL CONSENT

Necessary consent refers to terms that must be agreed upon to proceed with study participation. Optional consent regards terms that are not necessary to be agreed upon for Stage II participation. Note that consent given in Stage I carries forward throughout Stage II.

- Necessary Consent: Stage II Eligibility Contact: As previously mentioned, it may take up to a week after pre-enrolment to determine your Stage II eligibility in terms of psychological assessment scores. Once your eligibility/ineligibility to participate is ascertained, we will need to contact you with the outcome. If you are eligible, we will confirm that you are still willing to participate, and then enrol you in Stage II.

- Necessary Consent: Access to Medical Records: In this project we need to collect and use health information in your medical records from your GP / treating health professional. You gave us your medical history at the first appointment. At the second appointment, we would like you to update us on any new health information that has developed since then. As with Stage I, when acquiring this information from your health professional, please request that the full medical history at least contains any updates on the following:

  Medical history items of interest include premorbidities, comorbidities, current health conditions (particularly psychological/psychiatric), cancer histology/stage/receptor status/grade, time since cancer diagnosis etc. The treatment regimen items of interest include type of cancer treatment, therapeutic agent composition, dosage cycles and levels, and adjunct/other medications.

- Optional Consent: Possible Follow-Up Study: If we have the resources and time, we are considering running a three-month follow-up study. This would examine how well the treatment effects have been maintained across a longer period of time. We would like you to consider letting us contact you to take part in such a follow-up study. Once you receive such information, it is your choice if you decide to take part or not. You may change your mind at any point.

**Are there any benefits to being in the research project?**

The cognitive training may help improve mental decline, so this might be a benefit to participating. Sometimes people may appreciate the opportunity to discuss their experience with cancer and cancer-related cognitive impairment. Furthermore, with your treating practitioner(s) receiving assessment results, it is possible that you may receive useful health information. Please note, it is also possible there may not be any direct benefit for you from participating in this research. We hope the results of this research allow us to further our understanding of cancer, cancer-related cognitive impairment, and other mental and psychological effects of cancer. We also hope that our findings help cancer-related cognitive impairment detection, management, and treatment, as well as improve the quality of life, mood, and psychological wellbeing of people living with cancer.

**Are there any risks, side-effects, discomforts, or inconveniences from participation?**

There may be some minor risks and discomforts associated with this study. The cognitive training may be tiring and time consuming – we acknowledge it is not a small commitment on your part. With the assessments, we have been careful to make sure that the questions cause minimal/no emotional/psychological distress. However, as with all research, some parts of our study may be distressing. If the questions cause any concerns or upset you, please let us know, so we can take a break. We can also provide you with appropriate resources and helplines, if needed. As previously mentioned, there is also the possibility we uncover important health information that may be distressing. We will send this information to your GP / treating health professional, so that they may inform you appropriately. Blood sampling may potentially cause mild discomfort, bruising, and sometimes light headedness; to minimise this, the blood will be collected by a trained researcher, and you will be able to sit/lie down during the procedure. COVID-19 and other viral infections remain a risk for immunocompromised individuals. The researchers will take appropriate precautions before, during, and after the appointments to mitigate risk of contraction for both participants and researchers. The precautions include, but are not limited to, sanitising the testing facilities and equipment before/after each use, minimising participant contact with non-essential Curtin personnel, rescheduling appointments if either party have cold-like symptoms etc.

Lastly, aside from what has been mentioned above, the other inconvenience we foresee will be giving your time and effort required for participation. If you want psychological support around your cancer diagnosis, please call Cancer Council WA (13 11 20) during business hours. If you feel substantial psychological distress, call Lifeline (13 11 14) at any time.

If you feel you are in immediate danger, call 000 at once.

**Who will have access to my information?**

The information collected in this research will be re-identifiable (coded). This means that we will collect data that can identify you, but will then remove identifying information on any data or sample and replace it with a code when we analyse the data. Only the research team have access to the code to match your name when necessary. Any information we collect will be treated as confidential and used only in this project unless otherwise specified. The following people will have access to the deidentified information we collect in this research: the research team, research colleagues, and, in the event of an audit, staff from the Curtin University Office of Research and Development. If you have consented, pertinent health information will also be forwarded to your GP / treating healthcare professional. Although unlikely, re-identifiable information may be made available to legal bodies in certain extenuating cases. Electronic data will be password-protected and hard copy data (including audio tapes) will be in locked, restricted-access rooms/laboratories.

The data we collect in this study will be kept under secure conditions at Curtin University for a minimum 15 years after the research is published and then it will be kept indefinitely. The results will be published in that thesis and various papers to scientific journals; summary of results may also be presented in information sheets to oncology care providers, newsletters, and conferences. You will not be identifiable in publicly available results.

**Will you tell me the results of the research?**

We will write to you at the end of the research (in about 18-24 months) and send you the summary of our findings. Results will not be individual but based on all the information we collect and analyse as part of the research. As previously mentioned, we will send individual important health information we uncover to your GP / treating health professional, so that they can inform you appropriately. The primary aim of this research is to be submitted as a doctoral thesis for Siddharth Ganesh. As such, the results will be published in that thesis and various papers to scientific journals; summary of results may also be presented in information sheets to oncology care providers, newsletters, and conferences. If you would like to receive any of these documents, you are more than welcome to ask for a copy when we send you the summary of our findings. Please note published information will NOT be identifiable.

**Do I have to take part in the research project?**

Taking part in a research project is voluntary. It is your choice to take part or not. If you do not want to, you do not have to agree to participate. If you decide to take part and then change your mind, that is okay – you can withdraw from the study at any time. You do not have to justify your choice in withdrawing; just tell us that you want to cease participation. It is important you let us know you want to stop, rather than just stopping, so we can make sure you are aware of anything that needs to be done in order to withdraw safely. If you choose to leave the study, we may still use any information collected, unless you request otherwise. If you wish to also withdraw your data, we can destroy hardcopies, as well as delete electronic data. Please note that withdrawing data may not be possible once data analysis has been completed and the final writeup has been commenced.

**What happens next and who can I contact about the research?**

If you decide to take part in this research, we will ask you to sign the consent form. By signing the form, you are telling us that you understand what you have read and what has been discussed. Furthermore, signing also indicates that you agree to be in the research project and have your health information used as described. Please take your time and ask the researcher any questions you have before making your decision. You will be given a copy of this information sheet to keep.

If you have any questions, concerns, or feedback, please contact Siddharth Ganesh at: siddharth.ganesh@postgrad.curtin.edu.au or +61 493105286. If you want psychological support around your cancer diagnosis, please call Cancer Council WA (13 11 20) during business hours. If you feel substantial psychological distress, call Lifeline (13 11 14) at any time.

If you feel you are in immediate danger, call 000 at once.

*Curtin University Human Research Ethics Committee (HREC) has approved this study (HRE2023-0599). Should you wish to discuss the study with someone not directly involved, in particular, any matters concerning the conduct of the study or your rights as a participant, or you wish to make a confidential complaint, you may contact the Ethics Officer on (08) 9266 9223 or the Manager, Research Integrity on (08) 9266 7093 or email hrec@curtin.edu.au.*

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## CONSENT FORM

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|---|---|
| **HREC Project Number:** | HRE2023-0599 |
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NECESSARY CONSENT

| | | |
|---|---|---|
| ☐ I do | ☐ I do not | consent to being contacted with my eligibility information for Stage II participation. |
| ☐ I do | ☐ I do not | consent to the researchers accessing and using updates in my medical history, which I shall obtain from my treating practitioner before the follow-up appointment. |

OPTIONAL CONSENT

| | | |
|---|---|---|
| ☐ I do | ☐ I do not | consent to be contacted about participating in follow-up of the current study, if such a study should be run. |

- I have read the information statement version listed above and I understand its contents.
- I understand that this is a pre-enrolment into the trial, with full enrolment being conditional on my test scores meeting the eligibility criteria.
- I believe I understand the purpose, extent, and possible risks of my involvement in this project.
- I voluntarily consent to take part in this research project.
- I have had an opportunity to ask questions and I am satisfied with the answers I have received.
- I understand that this project has been approved by Curtin University Human Research Ethics Committee and will be carried out in line with the National Statement on Ethical Conduct in Human Research (2007).
- I understand I will receive a copy of this Information Statement and Consent Form.

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| Participant Name: | Date: |
| Participant Signature: | |

Declaration by researcher: I have supplied an Information Letter and Consent Form to the participant who has signed above, and believe that they understand the purpose, extent, and possible risks of their involvement in this project.

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| Researcher Name: | Date: |
| Researcher Signature: | |

*Note: All parties signing the Consent Form must date their own signature.*

## Eligibility Outcome

To be filled and signed by the researcher when eligibility has been determined. Ensure each item is dated and initialised, as this process may span multiple days.

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| ☐ Yes | ☐ No | ☐ N/A | The participant has met the neuropsychological assessment score eligibility criteria. |
| Notes: | | | |
| ☐ Yes | ☐ No | ☐ N/A | The participant has been contacted and informed of their eligibility. |
| Notes:<br><br>Number of times contacted: | | | |
| ☐ Yes | ☐ No | ☐ N/A | The participant has reaffirmed their consent verbally / textually to participate in Stage II. |
| Notes: | | | |
| ☐ Yes | ☐ No | ☐ N/A | The participant has been officially invited to participate in Stage II. |
| Notes: | | | |
| ☐ Yes | ☐ No | ☐ N/A | The participant has enrolled in Stage II. |
| Notes: | | | |

Declaration by researcher: To the best of my knowledge, this participant has understood the purpose, extent, and possible risks of their involvement in this project.

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|---|---|
| Researcher Name: | Date: |
| Researcher Signature: | |