

# Understanding Brain Inflammation in Cognitive Problems (BRIC)

<b>Submission date</b> 28/03/2024	<b>Recruitment status</b> Recruiting	<input type="checkbox"/> Prospectively registered
		<input type="checkbox"/> Protocol
<b>Registration date</b> 09/07/2024	<b>Overall study status</b> Ongoing	<input type="checkbox"/> Statistical analysis plan
		<input type="checkbox"/> Results
<b>Last Edited</b> 19/05/2025	<b>Condition category</b> Nervous System Diseases	<input type="checkbox"/> Individual participant data
		<input checked="" type="checkbox"/> Record updated in last year

## Plain English summary of protocol

### Background and study aims

Dementia with Lewy bodies (DLB) affects one hundred thousand people in the UK. The causes of DLB are not completely understood but it is expected that the immune system plays an important role, as it does with Alzheimer's disease (AD). In AD, activation of the immune system is thought to happen years before the symptoms of dementia occur. This immune activation increases the risk of developing AD in later life. Also, events that activate the immune system in the blood, such as urine infections, are known to cause worsening of memory symptoms in people who already have AD. We do not yet know if the same is true in DLB.

We will measure inflammation in the body using blood tests to answer important questions such as:

1. Are cognitive problems associated with inflammation?
2. Is inflammation associated with the progression of cognitive problems?

### Who can participate?

People aged 60 years and over with specific cognitive problems, along with people aged 60 years and over without cognitive problems.

### What does the study involve?

All participants will have a clinical assessment and blood samples. The clinical assessment will help the researchers to understand the problems people are experiencing, and if their problems are progressing over time. Blood samples will show how inflammation in the body affects the brain. Participants will have a further clinical assessment and blood samples annually for 2 years. The findings of this study could identify inflammation as a new treatment target for people with cognitive problems.

### What are the possible benefits and risks of participating?

There is no direct benefit from taking part in this study. However, the information from this study may help improve the future treatment of people with cognitive problems.

### Where is the study run from?

University of Southampton (UK)

When is the study starting and how long is it expected to run for?  
February 2020 to September 2029

Who is funding the study?  
Lewy Body Society (UK)

Who is the main contact?  
Dr Jay Amin, jay.amin@soton.ac.uk

## Contact information

### Type(s)

Public, Scientific, Principal investigator

### Contact name

Dr Jay Amin

### ORCID ID

<https://orcid.org/0000-0003-3792-0428>

### Contact details

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## Additional identifiers

### Clinical Trials Information System (CTIS)

Nil known

### Integrated Research Application System (IRAS)

305370

### ClinicalTrials.gov (NCT)

Nil known

### Protocol serial number

CPMS 54263

## Study information

### Scientific Title

Understanding Brain Inflammation in Cognitive Problems (BRIC)

### Acronym

BRIC

## **Study objectives**

Current Study hypothesis as of 16/05/2025:

1. MCI-LB/mild DLB will show an increased peripheral pro-inflammatory profile and increased immunosenescent profile at baseline compared to controls.
2. Increased immunosenescent markers at baseline will be associated with more rapid disease progression in MCI-LB/mild DLB.
3. More frequent occurrence of peripheral pro-inflammatory events (e.g. infections, surgery) will be associated with increased pro-inflammatory cytokines and more rapid disease progression in MCI-LB/mild DLB.

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Previous Study hypothesis:

1. Mild cognitive impairment with Lewy bodies (MCI-LB)/mild dementia with Lewy bodies (DLB) will be associated with increased 18F-DPA714 binding, which will be associated with more rapid disease progression.
2. 18F-DPA714 binding will decline over time in MCI-LB/mild DLB.
3. MCI-LB/mild DLB will show an altered peripheral inflammatory profile at baseline compared to controls.
4. Alterations in immunosenescent markers at baseline will be associated with more rapid disease progression in MCI-LB/mild DLB.
5. More frequent occurrence of peripheral pro-inflammatory events (e.g. infections, surgery) will be associated with increased pro-inflammatory cytokines and more rapid disease progression in MCI-LB/mild DLB.

## **Ethics approval required**

Ethics approval required

## **Ethics approval(s)**

approved 15/11/2022, Wales REC 7 (St David's Park, Carmarthen, SA31 3HB, United Kingdom; +44 (0)2922 941107; Wales.REC7@wales.nhs.uk), ref: 22/WA/0312

## **Study design**

Longitudinal observational case-control study

## **Primary study design**

Observational

## **Study type(s)**

Other

## **Health condition(s) or problem(s) studied**

Dementia with Lewy bodies

## **Interventions**

Current interventions as of 16/05/2025:

At the initial baseline assessment, consent and clinical assessment will be carried out over two visits, each taking 1-2 hours. This will include a blood test.

Follow-up will take place annually for 2 years. After 1 year, the researchers will contact study volunteers to see if they are happy to have an appointment to repeat some of the assessments, have a blood sample and repeat the questionnaires with a relative/friend, taking 1-2 hours.

After 2 years, the researchers will contact study volunteers to see if they are happy to have clinical assessment, questionnaires and a repeat blood sample, taking 1-2 hours.

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Previous interventions:

At the initial baseline assessment, consent and clinical assessment will be carried out over two visits, each taking 1-2 hours. This will include a blood test. Most participants will have brain scans (a combined PET and MRI scan, or separate PET and MRI scans on different days, each taking 1-1.5 hours).

Follow-up will take place annually for 2 years. After 1 year, the researchers will contact study volunteers to see if they are happy to have an appointment to repeat some of the assessments, have a blood sample and repeat the questionnaires with a relative/friend, taking 1-2 hours.

After 2 years, the researchers will contact study volunteers to see if they are happy to have repeat brain imaging, clinical assessment, questionnaires and a repeat blood sample, taking 1-2 hours.

### **Intervention Type**

Other

### **Primary outcome(s)**

Current primary outcome measure as of 16/05/2025:

Peripheral blood inflammatory profile is measured by flow cytometry of cells and analysis of inflammatory markers at baseline, 1 year and 2 years.

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Previous primary outcome measure:

Brain Mitochondrial Translocator Protein (TSPO) is measured by 18F-DPA714 binding (mean cortical and regional) at baseline and 2 years

### **Key secondary outcome(s)**

Current secondary outcome measures as of 16/05/2025:

1. Cognition is measured using the Mini Mental State Examination (MMSE) and Montreal Cognitive Assessment (MoCA) at baseline, 1 year and 2 years.
  2. Global functional impairment is measured using the Clinical Dementia Rating Scale Sum of Boxes at baseline, 1 year and 2 years.
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Previous secondary outcome measures:

1. Peripheral blood inflammatory profile is measured by flow cytometry of cells and analysis of inflammatory markers at baseline, 1 year and 2 years
2. Cognition is measured using the Mini Mental State Examination (MMSE) and Montreal Cognitive Assessment (MoCA) at baseline, 1 year and 2 years
3. Global functional impairment is measured using the Clinical Dementia Rating Scale Sum of Boxes at baseline, 1 year and 2 years

**Completion date**

01/09/2029

## Eligibility

**Key inclusion criteria**

MCI-LB/DLB group:

1. Age  $\geq 60$  years
2. Fulfil criteria for probable MCI-LB (McKeith et al., 2020) or DLB (McKeith et al., 2017)
3. Capacity to consent to participation in the study
4. MMSE  $\geq 20$
5. If on cholinesterase inhibitors and/or memantine, stable dose for 3 months

Control group:

1. Age  $\geq 60$  years
2. MMSE  $\geq 27$
3. No evidence of mild cognitive impairment or dementia

**Participant type(s)**

Healthy volunteer, Patient

**Healthy volunteers allowed**

No

**Age group**

Adult

**Lower age limit**

60 years

**Upper age limit**

120 years

**Sex**

All

**Key exclusion criteria**

1. Active systemic inflammatory disease
2. Active autoimmune disease
3. Taking immune system modifying medications (e.g., oral steroids or tumour necrosis factor inhibitors)

4. Taking incretin analogues (e.g., liraglutide), minocycline or other microglial suppressing agents
5. History of clinical stroke
6. Current major depression
7. History of bipolar disorder, non-organic psychosis (e.g., longstanding schizophrenia) or recurrent severe depression
8. Chronic migraine

**Date of first enrolment**

14/02/2024

**Date of final enrolment**

14/08/2027

## Locations

**Countries of recruitment**

United Kingdom

England

**Study participating centre**

**Hampshire and Isle of Wight Healthcare NHS Foundation Trust**

Tatchbury Mount Hospital

Calmore

Southampton

United Kingdom

SO40 2RZ

## Sponsor information

**Organisation**

University of Southampton

**ROR**

<https://ror.org/01ryk1543>

## Funder(s)

**Funder type**

Charity

**Funder Name**

Lewy Body Society

**Alternative Name(s)**

The Lewy body Society, LBS

**Funding Body Type**

Government organisation

**Funding Body Subtype**

Associations and societies (private and public)

**Location**

United Kingdom

## **Results and Publications**

**Individual participant data (IPD) sharing plan**

The datasets generated during and/or analysed during the current study will be stored in a non-publicly available repository (<https://www.dementiasplatform.uk/>)

**IPD sharing plan summary**

Stored in non-publicly available repository