

# Visual and auditory hallucinations following cardiac surgery

<b>Submission date</b> 22/07/2025	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered <input checked="" type="checkbox"/> Protocol
<b>Registration date</b> 29/07/2025	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
<b>Last Edited</b> 28/07/2025	<b>Condition category</b> Mental and Behavioural Disorders	<input type="checkbox"/> Individual participant data <input checked="" type="checkbox"/> Record updated in last year

## Plain English summary of protocol

### Background and study aims

Patients undergoing major heart surgeries such as coronary artery bypass grafting (CABG) or valvular surgery sometimes experience hallucinations after their operation, meaning they might see or hear things that are not real. These hallucinations can cause stress, slow down recovery, and negatively impact overall well-being. This research aims to identify why these hallucinations occur and if certain factors, such as gender (male or female), type of surgery, medical history, mechanical ventilation duration, kidney function, or medications used during and after surgery, increase the risk. The study is specifically interested in understanding if CABG and valvular surgery have different risk factors.

### Who can participate?

Adult patients who have had heart surgery across multiple hospitals in Palestine.

### What does the study involve?

Patients will be monitored closely for the first 7 days after surgery to record whether they experience any visual or auditory hallucinations.

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

The main goal is to help healthcare professionals identify which patients are at higher risk, allowing better preparation, closer monitoring, and improved care after heart surgery. The results could also lead to strategies that help reduce these disturbing experiences, making recovery smoother and improving patients' quality of life.

Participation involves minimal risk. The study requires patients to answer questions about their experiences post-surgery and allows access to their clinical data. Some may find questions about hallucinations distressing. Participation is voluntary, and participants may withdraw at any time without impact on their care.

### Where is the study run from?

Palestinian Clinical Research Center, Palestine

When is the study starting and how long is it expected to run for?  
September 2022 to June 2025

Who is funding the study?  
Investigator initiated and funded

Who is the main contact?  
Dr Mahammad Alnees, a2011z2012z2013@gmail.com

## Contact information

### Type(s)

Principal Investigator

### Contact name

Dr Haitham Abu Khadija

### ORCID ID

<https://orcid.org/0000-0002-2336-3125>

### Contact details

P.O.Box1, DerechPasternak1  
Rehovot  
Israel  
76100  
+972 0526391486  
[haithamab1@clalit.org.il](mailto:haithamab1@clalit.org.il)

### Type(s)

Public, Scientific, Principal Investigator

### Contact name

Dr Mohammad Alnees

### ORCID ID

<https://orcid.org/0000-0002-5577-8499>

### Contact details

Al , Awda Street  
Bethlehem  
Palestine, State of  
P400  
+970 0599240098  
[S11743633@stu.najah.edu](mailto:S11743633@stu.najah.edu)

### Type(s)

Principal Investigator

### Contact name

Dr Nizar Abu Hamdeh

**ORCID ID**

<https://orcid.org/0009-0000-4209-0137>

**Contact details**

Al , Awda Street  
Bethlehem  
Palestine, State of  
P400  
+972 59-590-2745  
s12042043@stu.najah.edu

**Type(s)**

Principal Investigator

**Contact name**

Dr Abdalaziz Darwish

**ORCID ID**

<https://orcid.org/0000-0002-3231-3672>

**Contact details**

rafidia  
nablus  
Palestine, State of  
P400  
+972 59-202-6839  
abdalaziz.darwish@najah.edu

**Type(s)**

Principal Investigator

**Contact name**

Dr Duha Najajra

**ORCID ID**

<https://orcid.org/0009-0007-3561-2380>

**Contact details**

Beit Hanina  
Jerusalem  
Israel  
90805  
+972 52-643-6745  
s12240420@stu.najah.edu

**Additional identifiers****EudraCT/CTIS number**

Nil known

**IRAS number**

**ClinicalTrials.gov number**

Nil known

**Secondary identifying numbers**

VAACS-2022-CORE01

## **Study information**

**Scientific Title**

VAACS study: predictors and outcomes of visual and auditory hallucinations following coronary artery bypass grafting and valve replacement surgery – a prospective multicenter cohort

**Acronym**

VAACS

**Study objectives**

To estimate the incidence and identify independent predictors of visual and auditory hallucinations in the early postoperative period following CABG or valve surgery.

**Ethics approval required**

Ethics approval required

**Ethics approval(s)**

Approved 12/09/2022, Institutional Review Board (IRB) at An-Najah National University (Faculty of Medicine and Health Sciences, An-Najah National University, Nablus, 44839, Palestine, State of; +970 9 2345113; s11743633@stu.najah.edu), ref: 2022/8

**Study design**

Prospective cohort study

**Primary study design**

Observational

**Secondary study design**

Cohort study

**Study setting(s)**

Hospital

**Study type(s)**

Other, Quality of life, Treatment, Safety

**Participant information sheet**

Patient information material can be found at [https://docs.google.com/document/d/1jSCuKhPGwXlrQOr\\_iHapECnAfZQaD57I/edit?usp=sharing&ouid=111127472982961654536&rtpof=true&sd=true](https://docs.google.com/document/d/1jSCuKhPGwXlrQOr_iHapECnAfZQaD57I/edit?usp=sharing&ouid=111127472982961654536&rtpof=true&sd=true)

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

Postoperative neuropsychiatric complications, visual hallucinations, auditory hallucinations, cardiac surgery, cognitive dysfunction.

## **Interventions**

This is a prospective observational cohort study.

Participants undergoing CABG or valve surgery were screened and enrolled postoperatively.

Data collection included:

- \* Daily assessment of hallucinations using the Questionnaire for Psychotic Experiences (QPE) for up to 7 days post-surgery or until discharge (whichever comes first).

- \* Collection of clinical, demographic, medication, and perioperative data.

- \* No interventions were administered beyond routine clinical care.

Total observation period: up to 7 days.

Total follow-up: until hospital discharge.

## **Intervention Type**

Other

## **Primary outcome measure**

Occurrence of postoperative visual and auditory hallucinations measured using the QPE tool within 7 days of surgery.

## **Secondary outcome measures**

Hallucination severity measured using the Questionnaire for Psychotic Experiences (QPE) severity scale within 7 days of surgery.

## **Overall study start date**

12/09/2022

## **Completion date**

30/06/2025

# **Eligibility**

## **Key inclusion criteria**

1. Adults aged 18 years or older
2. Scheduled for elective or semi-elective cardiac surgery (either isolated CABG or valvular surgery)

## **Participant type(s)**

Patient

## **Age group**

Mixed

## **Lower age limit**

18 Years

## **Upper age limit**

100 Years

**Sex**

Both

**Target number of participants**

1600

**Total final enrolment**

1332

**Key exclusion criteria**

1. Inability to provide informed consent or complete the questionnaire (e.g. language barrier or severe cognitive impairment)
2. Known history of major psychiatric or neurological disorders that could confound hallucination assessment (such as schizophrenia or dementia)
3. Parkinson's disease
4. Blindness (precluding visual hallucinations assessment)
5. Active alcohol or substance abuse
6. Clinical diagnosis of delirium at the time of screening
7. Pre-existing chronic hallucinations or psychotic disorders
8. Emergency surgery cases
9. Patients on mechanical circulatory support, given their distinct risk profiles for neuropsychiatric complications

**Date of first enrolment**

20/09/2022

**Date of final enrolment**

30/06/2025

**Locations****Countries of recruitment**

Palestine, State of

**Study participating centre**

Palestinian Clinical Research Center

-

Bethlehem

Palestine, State of

P400

**Sponsor information****Organisation**

An-Najah National University

**Sponsor details**

Nablus-Rafidia, Qasrawi Street  
Nablus  
Palestine, State of  
00970  
+9709238900  
info@najah.edu

**Sponsor type**

University/education

**Website**

<https://www.najah.edu/en/academic/faculties/>

**ROR**

<https://ror.org/0046mja08>

**Organisation**

Palestinian Clinical Research Center

**Sponsor details**

Al , Awda Street  
Bethlehem  
Palestine, State of  
90435  
+972 55-560-4917  
researchcenterpalestinianclini@gmail.com

**Sponsor type**

Other

**Website**

<https://www.facebook.com/share/19R5NRuZUd/?mibextid=wwXIfr>

**Funder(s)****Funder type**

Other

**Funder Name**

Investigator initiated and funded

**Results and Publications**

**Publication and dissemination plan**

Results from this study will be published in peer-reviewed medical journals and presented at national and international scientific conferences. Authorship will follow established international guidelines (ICMJE criteria). Additionally, a simplified summary of findings will be prepared and shared with relevant patient groups, clinicians, and healthcare policymakers.

**Intention to publish date**

01/01/2026

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

Anonymised participant data that support the findings of this study will be available upon reasonable request after publication of primary results. Data requests must be accompanied by a clear scientific rationale, approved study protocol, and a signed data-sharing agreement. Requests can be submitted directly to the corresponding author/principal investigator, Dr Mahammad Alnees, a2011z2012z2013@gmail.com.

**IPD sharing plan summary**

Available on request, Published as a supplement to the results publication

**Study outputs**

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Protocol file</a>			28/07/2025	No	No