Cerebral Autosomal Dominant Arteriopathy with Sub-cortical Infarcts and Leukoencephalopathy Study

COLLECTION AND SHIPMENT TRAINING

Version 1.1
Training Overview

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- Handling/Processing Study Specimens
- Incomplete or Difficult Blood Draws and Redraws
  - Packaging Sample Shipments
    - Sample Form
    - NCRAD Website
- Common Nonconformance Issues
  - Questions?
NCRAD Contact Information

Questions?
Zoë Potter, BA, CCRP, Study Coordinator
Phone: (317) 278-9086
Email: zdpotter@iu.edu

General NCRAD Contact Information
Phone: 1-800-526-2839
Email: alzstudy@iu.edu
Website: www.ncrad.org
CADASIL Study Specific Webpage: NCRAD - CADASIL Active Study Page
# CADASIL Blood-Based Collection Schedule

<table>
<thead>
<tr>
<th></th>
<th>Visit 1 (Baseline)</th>
<th>Visit 2 (18 month)</th>
<th>Visit 3 (36 month)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plasma</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Buffy Coat</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>RNA</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Serum</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
Kit Request Module

http://kits.iu.edu/cadasil
CADASIL Kit Request Module

- Enter your email to receive a confirmation email after you submit your kit request.
- Choose your site from the drop-down list.
- The coordinator name and contact information will appear.
- Verify that this information is accurate. Correct if necessary.

If possible, only order what you will need in the next month.
CADASIL Kit Request Module

- Indicate the quantity needed of each kit
  - Once selected, kit components of the chosen kit will appear at the bottom of the screen

- You can order extra supplies individually by selecting “Yes” here.

- We will return requests within 3 weeks from the order date.
  - If you need any supplies expedited, please contact the NCRAD Coordinator via email.

- Click “Submit” to turn in your request.

- **Note: You can order more than one type of kit in a single kit request**
• CADASIL Participant Blood Supply Kit
• CADASIL Blood Supplemental Supply Kit
• CADASIL Frozen Blood Shipping Kit
• Each individual site will be responsible for ordering and maintaining a steady supply of kits from NCRAD. We advise sites to keep a supply of each kit type available for scheduled participants.

• Be sure to check your supplies and order additional materials before you run out or supplies expire so you are prepared for study visits.

• Allow a minimum of **3 weeks** for your order to be processed and delivered.

• Due to ongoing supply limitations, we ask that you please only order as many kits and extra supplies that you will be able to use in the next 30 days.
Specimen Labels
Provided by NCRAD
Four Label Types

Kit Number Labels

Collection Tube Labels

Site and CADASIL ID Labels

Cryovial Tube Labels
• Used to track patient samples and provide quality assurance – Will be placed on the following locations:
  1. Blood Sample and Shipment Notification Form (Appendix B).
  2. Lid of cryobox that houses aliquot tubes during storage and shipment.
  3. One extra label provided
Collection Tube Labels

Collection Tube labels have 4 components:
- Study name
- 10-digit specimen barcode
- Specimen type
- Kit number

Will be placed on the following locations:
- All Collection Tubes
  - 4 x EDTA (Lavender-Top) Blood Collection Tube (10 mL)
  - 2 x PAXgene™ Blood Collection Tube (2.5 mL)
  - 1 x SST (Tiger-Top) Blood Collection Tube (8.5 mL)
Subjects will be identified by their Site and PTID.

Sites will be responsible for handwriting this onto the provided labels:
- Must use fine point permanent marker
- Write information on label prior to adhering to tube

Will be placed on the following locations:
- 4 x EDTA (Lavender-Top) Blood Collection Tube (10 mL)
- 2 x PAXgene™ Blood Collection Tube (2.5 mL)
- 1 x SST (Tiger-Top) Blood Collection Tube (8.5 mL)
Cryovial Tube Labels

- Only one label to be placed on each 2.0 mL cryovial
  - **Plasma**
    - From EDTA tube
  - **Buffy Coat**
    - From EDTA tube
  - **Serum**
    - From SST tube

**Important:** Do not cover barcode that is pre-etched on cryovial.
Blood Collection Tube Labels:

Label 1: Collection Tube Label

![Label 1 Image]

Label 2: Site and CADASIL ID Label

![Label 2 Image]
Labeling Biologic Samples

- Label all collection and aliquot tubes before cooling, collecting, processing or freezing samples.
- Label only 1 subject’s tubes at a time to avoid mix-ups.
- Wrap the label around the tube horizontally. Label position is important for all tube types.
- Make sure the label is completely adhered by rolling between your fingers.

DO NOT cover pre-etched specimen numbers/barcodes on the cryovials!
Handling/Processing Study Specimens
Site Required Equipment

BLOOD COLLECTION/SAFETY EQUIPMENT

1) Personal Protective Equipment:
   1) Lab coat, nitrile/latex gloves, safety glasses
2) Tourniquet
3) Alcohol Prep Pad
4) Gauze Pad
5) Bandage
6) Butterfly needles and hub
7) Microcentrifuge tube rack
8) Sharps bin and lid

PROCESSING/STORAGE EQUIPMENT

1) Centrifuge capable of $\geq 2000 \times g$ at room temperature
2) -80°C Freezer
3) Wet Ice Bucket
# Blood Draw Order

<table>
<thead>
<tr>
<th>Tube Type</th>
<th>Number of Tubes Drawn</th>
<th>Tube Image</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. EDTA (Lavender-Top) Blood Collection Tube (10 mL)</td>
<td>4</td>
<td><img src="image1.png" alt="Image" /></td>
</tr>
<tr>
<td>2. PAXgene™ Blood Collection Tube (2.5 mL)</td>
<td>2</td>
<td><img src="image2.png" alt="Image" /></td>
</tr>
<tr>
<td>3. SST (Tiger-Top) Blood Collection Tubes (8.5 mL)</td>
<td>1</td>
<td><img src="image3.png" alt="Image" /></td>
</tr>
</tbody>
</table>
# Aliquot Cap Colors

<table>
<thead>
<tr>
<th>Cap Color</th>
<th>Sample Type</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purple Cap</strong> (8 x 0.75 mL and 12 x 2 mL)</td>
<td>Plasma</td>
</tr>
<tr>
<td><strong>Blue Cap</strong> (2 x 2.0 mL)</td>
<td>Residual (plasma and serum)</td>
</tr>
<tr>
<td><strong>Gray Cap</strong> (4 x 2.0 mL)</td>
<td>Buffy Coat</td>
</tr>
<tr>
<td><strong>Red Cap</strong> (8 x 0.75 mL and 1 x 2 mL)</td>
<td>Serum</td>
</tr>
</tbody>
</table>

![Image of Aliquot Cap Colors]

- **Purple Cap**: 0.75 mL (Plasma), 0.75 mL (Serum)
- **Blue Cap**: 2 mL (Plasma), 2 mL (Residual)
- **Gray Cap**: 2 mL (Plasma), 2 mL (Buffy Coat)
- **Red Cap**: 2 mL (Plasma), 2 mL (Serum)
Plasma Collection

4 x EDTA (Lavender-Top) Blood Collection Tube (10 mL)
- Create up to (8) 0.25 mL plasma aliquots
- Create up to (12) 1.5 mL plasma aliquots
- Create up to (1) 1.5 mL residual plasma aliquot

NOTE: When pipetting plasma from the conical into the cryovials, be very careful to pipette the plasma top layer only, leaving the buffy coat and the red blood cell layers untouched.
Buffy Coat Collection

4 x EDTA (Lavender-Top) Blood Collection Tube (10 mL)
• Create up to (4) 1.5 mL buffy coat aliquots
  • Expected to have a reddish color from the RBCs.
  • Be sure to only place the buffy coat from one EDTA tube into each cryovial

48 cell cryobox with 2.0 mL cryovials

Buffy Coat layer

Buffy Coat Aliquot (Please use GRAY CAP cryovial)
Important Note: Ensure all tubes are not expired prior to collection and processing of samples.
RNA Collection

- 2 x PAXgene™ Blood Collection Tube (2.5 mL)
  - Both tubes are to be shipped to NCRAD frozen, without processing at the collection site.
**RNA Preparation (2.5ml PAXgene™ Tube)**

**Step One**
- Store tubes at room temperature.
- Label tubes with pre-printed labels prior to blood draw.

**Step Two**
- Collect blood in PAXgene™ tube allowing blood to flow for 10 seconds and ensuring blood flow has stopped.

**Step Three**
- Immediately after blood draw, invert tubes 8-10 times to mix samples.

**Step Four**
- Store tubes at -80°C in a wire rack until shipment.

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**Important Note:** Ensure all tubes are not expired prior to collection and processing of samples.
Serum Collection

96 cell cryobox with 0.75 mL cryovials

48 cell cryobox with 2.0 mL cryovials

1 x SST (Tiger-Top) Blood Collection Tubes (8.5 mL)
- Create up to (8) 0.25 mL serum aliquots
- Create up to (1) 1.5 mL serum aliquots
- Create up to (1) 1.5 mL residual serum aliquot
Important Note: Ensure all tubes are not expired prior to collection and processing of samples.

SST (Tiger-Top) Blood Collection Tubes (8.5 mL) for Serum x 1

**Step One:**
- Store tubes at room temperature.
- Label tubes with preprinted labels prior to blood draw.

**Step Two:**
- Collect blood in (1) 8.5 Tiger-Top tube allowing blood to flow for 10 seconds and ensure blood flow has stopped.

**Step Three:**
- Immediately after blood draw, invert tube 8-10 times to mix samples.

**Step Four:**
- Allow blood to clot for 30 minutes.
- Within 2 hours of blood draw, centrifuge samples at 2000 x g at room temperature for 10 minutes.

**Step Five:**
- Adhere preprinted labels to the red-cap cryovials.
- Aliquot 0.25 mL into each 0.75 mL cryovial tube and aliquot 1.5 mL into the 2.0 mL cryovial tube.
- If a residual aliquot is created, document specimen number on Sample Notification Form.
- Store serum aliquots at -80°C until shipment.

Up to (8) 0.25 mL aliquots

Up to (1) 1.5 mL aliquot
Incomplete or Difficult Blood Draws and Redraws

***Important Note***
If challenges arise during the blood draw process, it is advised that the phlebotomist discontinue the draw. Attempt to process and submit any blood-based specimens that have already been collected to NCRAD.

Redraws will be scheduled for samples submitted to NCRAD.
Situations may arise that prevent study coordinators from obtaining the total amount scheduled for biofluids. In these situations, please follow the below steps:

1. If the biofluids at a scheduled visit are partially collected:
   a. Attempt to process and submit any samples that were able to be collected during the visit.
   b. Document difficulties on the ‘Biological Sample and Shipment Notification Form’ prior to submission to NCRAD.
      i. Indicate blood draw difficulties at the bottom of the ‘Biological Sample and Shipment Notification Form’ within the “Notes” section.
      ii. Complete the ‘Biological Sample and Shipment Notification Form’ with tube volume approximations and number of aliquots created.
   c. Contact a NCRAD coordinator and alert them of the challenging blood draw.

2. If the biofluids at a scheduled visit are not collected:
   a. Contact the CADASIL Global Coordinator and a NCRAD coordinator to alert them of the challenging blood draw or circumstances as to why biofluids were not collected.
   b. Schedule participant for a re-draw visit as quickly as possible.
Packaging Sample Shipment
# Sample Shipment Summary

<table>
<thead>
<tr>
<th>Sample Type</th>
<th>Tube Type</th>
<th>Number of Tubes Supplied in Kit</th>
<th>Processing/Aliquoting</th>
<th>Tubes to NCRAD</th>
<th>Ship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole blood for isolation of plasma &amp; buffy coat (for DNA extraction)</td>
<td>EDTA (Lavender-Top) Blood Collection Tube (10 mL)</td>
<td>4</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>PLASMA: 0.75 mL cryovials</td>
<td>8</td>
<td>0.25 mL plasma aliquot per 0.75 mL cryovial (Micronic™ purple cap)</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PLASMA: 2.0 mL cryovials</td>
<td>12</td>
<td>1.5 mL plasma aliquot per 2.0 mL cryovial (Micronic™ purple cap)</td>
<td>12</td>
<td>Frozen</td>
</tr>
<tr>
<td></td>
<td>PLASMA RESIDUAL: 2.0 mL cryovials</td>
<td>1</td>
<td>1.5 mL plasma aliquot per 2.0 mL cryovial (Micronic™ blue cap)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BUFFY COAT: 2.0 mL cryovials</td>
<td>4</td>
<td>1 mL buffy coat aliquot per 2.0 mL cryovial (Micronic™ gray cap)</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Whole blood for RNA extraction</td>
<td>PAXgene™ Blood Collection Tube (2.5 mL)</td>
<td>2</td>
<td>N/A</td>
<td>2</td>
<td>Frozen</td>
</tr>
<tr>
<td>Whole blood for isolation of serum</td>
<td>SST (Tiger-Top) Blood Collection Tubes (8.5 mL)</td>
<td>1</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>SERUM: 0.75 mL cryovials</td>
<td>8</td>
<td>0.25 mL serum aliquot per 0.75 mL cryovial (Micronic™ red cap)</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SERUM: 2.0 mL cryovials</td>
<td>1</td>
<td>1.5 mL serum aliquot per 2.0 mL cryovial (Micronic™ red cap)</td>
<td>1</td>
<td>Frozen</td>
</tr>
<tr>
<td></td>
<td>SERUM RESIDUAL: 2.0 mL cryovials</td>
<td>1</td>
<td>1.5 mL serum aliquot per 2.0 mL cryovial (Micronic™ blue cap)</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
Frozen Shipment Packaging

All samples shipped frozen to NCRAD Monday-Wednesday ONLY

On the day of scheduled UPS pick-up, begin packaging specimens on dry ice at least 1 hour before UPS arrives. Hold samples in -80°C freezer until it is time to package the specimens on dry ice for shipment to NCRAD.

Include copy of Blood Sample Shipment and Notification Form

Batch shipping should be performed every (3) three months or when specimens from 4 participants accumulate, whichever is sooner.
Frozen Shipment Packaging

- Place all frozen labeled aliquots of plasma, buffy coat, serum, and residual aliquots from the same subject in the cryoboxes. Place both cryoboxes from the same subject into the biohazard bag with absorbent sheet.

- Place frozen (2) PAXgene™ tubes in provided bubble wrap tube sleeves, seal, and place in biohazard bag with cryoboxes. Seal biohazard bag according to the instructions on the bag.
Frozen Shipment Packaging

- Place 2-3 inches of dry ice in the bottom of the Styrofoam shipping container, then insert the cryoboxes laying upright.
- Fully cover the cryoboxes with about 2 inches of dry ice in the provided shipper.
- Each Styrofoam shipper must contain about 45 lbs (20 kg) of dry ice.
- Fill shipper to the top with dry ice!
Frozen Shipping – Dry Ice Requirements

Dry Ice label should not be covered with other stickers and must be completed or the shipping carrier will reject/return your package!
Creating Airbills/Scheduling Pickups
Log into the ShipExec Thin Client:
https://kits.iu.edu/UPS

Click on the “Shipping” dropdown and click on “Shipping and Rating”
Finding Your Contact Information

- On the right side of the screen, choose the name of your study from the “Study Group” drop down menu
  - *This step must be done 1st*

- On the left side of the screen, Click on the magnifying glass icon
Finding Your Contact Information

- On the right side of the screen, a list of all the site addresses within the study you selected should populate.

- User can filter the search for their address further by filling in the “Company”, “Contact”, or “Address 1” fields.

- Hit “Search” when ready.

- Once you have found your site address, click on the “Select” button to the left of the address.

- If any information needs to be updated, please reach out to the NCRAD Coordinator of your study.
Verify Information

- Please verify that both the shipping information AND study reference are correct for this shipment.
Entering Shipment Information

• Frozen shipments
  • Enter the total weight of your package in the “Weight” field
  • Enter the dry ice weight in the “Dry Ice Weight” field
    • The “Dry Ice Weight” field cannot be higher than the “Weight” field (will receive an error message)
Need to request UPS Pickup?

• Click on the “Pickup Request” button
• Fill out all fields for the pickup request
• Enter in the “Earliest Time Ready” and “Latest Time Ready” in 24-hour format
  • Users must schedule pickup minimum 1 hour before “Earliest Time Ready”
• Choose a name and number that is the best to contact if the UPS driver has questions related to picking up your package
• Entering the Room Number and Floor will help the UPS driver locate your package
  • Room number field is free text
  • Floor field is numerical only
• Hit “Save” when done
Shipping Packages

- If all fields in “Ship From” and “Shipment Information” fields are completed, and pickup request is completed (if necessary), click Ship in the bottom right corner of the page.
Accessing Airbill

Check Pickup Status by going to UPS.com, click on the Shipping, select Schedule a Pickup, and look on the right side of screen to click on “Pickup Request Status”. Enter in the Pickup No. listed on receipt into PRN field and submit.
Accessing Airbill

- Print out the UPS air waybill
- Fold the UPS air waybill and slide it inside the plastic UPS sleeve (NCRAD will provide these in kit requests)
- Peel the back off the plastic UPS sleeve and stick the sleeve to your package, making sure it is laying as flat as possible along the surface of the package.
Reprint Airbills/Voiding Shipments

• To reprint airbill or void a shipment, click “History” at the top of the ShipExec Thin Client portal

• If your shipment doesn’t automatically pop up, enter in the date of shipment and then click “Search”
# Reprint Airbill

- Click the print icon to reprint airbill

<table>
<thead>
<tr>
<th>Action</th>
<th>Global MSN</th>
<th>Tracking Number</th>
<th>Shipper Reference</th>
<th>Consignee Reference</th>
<th>Ship Date</th>
<th>Weight</th>
<th>Rated Weight</th>
<th>Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9506</td>
<td>1Z976R8W8430841976</td>
<td></td>
<td>6683830</td>
<td>2020-12-08</td>
<td>20 LB</td>
<td>20 LB</td>
<td></td>
</tr>
</tbody>
</table>
Void Shipment

- To void a shipment, click on the “X” symbol

<table>
<thead>
<tr>
<th>Action</th>
<th>Global MSN</th>
<th>Tracking Number</th>
<th>Shipper Reference</th>
<th>Consignee Reference</th>
<th>Ship Date</th>
<th>Weight</th>
<th>Rated Weight</th>
<th>Dimension</th>
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<td>2020-12-08</td>
<td>20 LB</td>
<td>20 LB</td>
<td></td>
</tr>
</tbody>
</table>
Creating a ShipExec Account

• Please email the NCRAD Coordinator if you do not have a ShipExec Account:
  • Zoë Potter - zdpotter@iu.edu

• Once your ShipExec account is created, you will get an email from noreply@shipexec.com. This email will have a temporary password in the body of the email. Login using this password.
  • You will then be prompted to reset your password.
  • Look in your junk folder in case the email is being incorrectly flagged.
Blood Sample and Shipment Notification Form

NCRAD
A copy of the sample form must be emailed to NCRAD prior to the date of sample arrival.

Please include sample forms in all shipments of frozen samples.

Email: alzstudy@iu.edu
# Appendix B: Biological Sample and Shipment Notification Form

To:  
Email:  
Phone:  

From:  
Email:  

Study: CAGSRL  
Site ID:  
CAGSRL IND #:  

Sex:  
Year of Birth:  

Visit:  
Baseline  
18 Month  
30 Month  

## Blood Collection

<table>
<thead>
<tr>
<th>Specimen Number</th>
<th>Original volume drawn</th>
<th>Time PAXgene™ tubes placed in freezer</th>
</tr>
</thead>
<tbody>
<tr>
<td>(last four digits)</td>
<td>(ml)</td>
<td>(HH:MM)</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Blood Processing

### Serum (Red-top) Tube (8.5 ml)

<table>
<thead>
<tr>
<th>Time spin started</th>
<th>Number of 0.25 ml serum aliquots created (red cap)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(HH:MM)</td>
<td></td>
</tr>
</tbody>
</table>

### Duration of centrifuge

<table>
<thead>
<tr>
<th>Min(s)</th>
<th>Number of 1.5 ml serum aliquots created (red cap)</th>
</tr>
</thead>
</table>

### Temp of Centrifuge

<table>
<thead>
<tr>
<th>°C</th>
<th>Volume of residual serum aliquot (less than 1.5 ml in blue cap)</th>
</tr>
</thead>
</table>

### Rate of centrifuge

<table>
<thead>
<tr>
<th>x g</th>
<th>Specimen number of residual serum aliquot (last four digits)</th>
</tr>
</thead>
</table>

### Original volume drawn

<table>
<thead>
<tr>
<th>ml</th>
<th>Time aliquots placed in freezer (HH:MM)</th>
</tr>
</thead>
</table>

### Time aliquoted

<table>
<thead>
<tr>
<th>(HH:MM)</th>
<th>Storage temperature in freezer: °C</th>
</tr>
</thead>
</table>

### Platelet & Buffy Coat (Lavender-top) Tubes (18 ml)

<table>
<thead>
<tr>
<th>Time spin started</th>
<th>Time aliquoted</th>
</tr>
</thead>
<tbody>
<tr>
<td>(HH:MM)</td>
<td>(HH:MM)</td>
</tr>
</tbody>
</table>

### Duration of centrifuge

<table>
<thead>
<tr>
<th>Min(s)</th>
<th>Number of 0.25 ml plasma aliquots created (purple cap)</th>
</tr>
</thead>
</table>

### Temp of Centrifuge

<table>
<thead>
<tr>
<th>°C</th>
<th>Volume of residual plasma aliquot (less than 1.5 ml in blue cap)</th>
</tr>
</thead>
</table>

### Rate of centrifuge

<table>
<thead>
<tr>
<th>x g</th>
<th>Specimen number of residual plasma aliquot (last four digits)</th>
</tr>
</thead>
</table>

### Original volume drawn - EDTA #1

<table>
<thead>
<tr>
<th>ml</th>
<th>Time aliquots placed in freezer</th>
</tr>
</thead>
</table>

### Original volume drawn - EDTA #2

<table>
<thead>
<tr>
<th>ml</th>
<th>Storage temperature in freezer: °C</th>
</tr>
</thead>
</table>

### Original volume drawn - EDTA #3

| ml |                        |

### Aliquot volume - Buffy coat #1

| ml |                        |

### Aliquot volume - Buffy coat #2

| ml |                        |

### Aliquot volume - Buffy coat #3

| ml |                        |

### Aliquot volume - Buffy coat #4

| ml |                        |

### Aliquot volume - Buffy coat #5

| ml |                        |

### Aliquot volume - Buffy coat #6

| ml |                        |

## Notes

Version (05.2022)
Appendix A: Rate of Centrifugation Worksheet

It is critical that the tube be centrifuged at the appropriate speed to ensure proper serum and plasma separation. Use Rate of Centrifugation Worksheet to calculate RPM.

Submitter Information
Name: [Name] Site: [Site]
Submitter e-mail: [Email]

Centrifuge Information
Please answer the following questions about your centrifuge.

Centrifuge Type
Fixed Angle Rotor: [ ] Swing Bucket Rotor: [ ]

Radius of Rotation (mm): [ ]
Determine the centrifuge’s radius of rotation (in mm) by measuring distance from the center of the centrifuge spindle to the bottom of the device when inserted into the rotor (if measuring a swing bucket rotor, measure to the middle of the bucket).

Calculating RPM from G-Force:

$$ RCF = \left( \frac{RPM}{1,000} \right)^2 \times 1.118 \quad \Rightarrow \quad RPM = \sqrt{\frac{RCF}{r \times 1.118}} \times 1,000 $$

RCF = Relative Centrifugal Force (G-Force)
RPM = Rotational Speed (revolutions per minute)
r = Centrifugal radius in mm = distance from the center of the turning axis to the bottom of centrifuge

Comments: [ ]

Please send this form to NCRAD Study Coordinator at alzstudy@iu.edu
Noncomformance Issues
Nonconformance Issues

Sample aliquots and collection tubes frozen at an angle/inverted

Recommendation: Place aliquots in cryoboxes/tube rack in freezer \textit{upright} until shipment

Fields left blank on Blood Sample and Shipment Notification Form

Recommendation: Complete Sample Notification forms during the participant study visit as samples are processed.

Last time subject ate often left blank/unknown

Incorrect data reported on Sample and Shipment Notification Forms
Nonconformance Issues

All frozen samples for a participant not sent within one shipment box (plasma and buffy coat aliquots should be kept together)

Aliquots arriving to NCRAD without labels

Sample forms not scanned to NCRAD the day before shipment

Recommendation:
Ship Samples to NCRAD utilizing the Notification Form, by PTID. Do not throw away labels until samples are packed and shipped.
Nonconformance Issues

Multiple low volume aliquots

Recommendation:
Lay out cryovials in a row and aliquot in order until sample is depleted

1.5 ml

YES

NO
NCRAD Website
## NCRAD Website: Helpful Pages

### NCRAD - CADASIL Active Study Page

**https://ncrad.org/holiday_closures.html**

**https://ncrad.org/shipping_address.html**

### Holiday Closures

<table>
<thead>
<tr>
<th>Date</th>
<th>Holiday</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 1</td>
<td>New Year’s Day</td>
</tr>
<tr>
<td>3rd Monday in January</td>
<td>Martin Luther King, Jr Day</td>
</tr>
<tr>
<td>4th Monday in May</td>
<td>Memorial Day</td>
</tr>
<tr>
<td>June 19</td>
<td>Juneteenth (observed)</td>
</tr>
<tr>
<td>July 4</td>
<td>Independence Day (observed)</td>
</tr>
<tr>
<td>1st Monday in September</td>
<td>Labor Day</td>
</tr>
<tr>
<td>4th Thursday in November</td>
<td>Thanksgiving</td>
</tr>
<tr>
<td>4th Friday in November</td>
<td>Friday after Thanksgiving</td>
</tr>
<tr>
<td>December 25</td>
<td>Christmas</td>
</tr>
</tbody>
</table>

### UPS Shipping Resources

To generate an waybill and schedule UPS pickups for shipments to NCRAD, please visit the UPS ShipExec™ Thin Client website.

For instructions on how to use the UPS ShipExec™ Thin Client website, please refer to the NCRAD UPS ShipExec™ Thin Client Guide.
Contact Information

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