ACAD U19
Biospecimen Collection, Processing, and Shipment Training Slides
Version 2.2

in collaboration with the
National Centralized Repository for Alzheimer’s Disease and Related Dementias
Training Overview

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**If not able to collect blood samples for a participant, Saliva can be collected for DNA extraction**

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Questions?

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General NCRAD Contact Information
Phone: 1-800-526-2839
Alt. Phone: 317-278-8413
Email: alzstudy@iu.edu
Website: https://ncrad.org/
ACAD Study Specific Webpage: NCRAD - The ACAD Active Study Page
Globally Unique Identifier (GUID)

https://bricsguid.nia.nih.gov/portal/jsp/login.jsp
Globally Unique Identifier (GUID)

The GUID is a participant ID that allows researchers to share data specific to a study participant, without exposing personally identifiable information.

A GUID is made up of random alpha-numeric characters and does not include any PHI in the identifier.
Globally Unique Identifier (GUID) cont.

- To create a GUID follow these steps:
  2. Once you have an account, go to the GUID Tool – Create GUID
  3. To open the ‘Launch GUID Tool’ you will need to have Java installed on your device
  4. In order to generate a GUID, the following PHI is required ([Appendix A](#)):
     - Complete legal given (first) name of participant at birth
     - If the participant has a middle name
     - Complete legal family (last) name of participant at birth
     - Day of birth
     - Month of birth
     - Year of birth
     - Name of city/municipality in which participant was born
     - Country of birth
Kit Request Module

https://redcap.link/acadU19
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.
NCRAD 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**
• Kits and individual supplies are available to order:
  • Blood Kits:
    • ACAD Blood-Based Kit
    • ACAD Blood-Based Supplemental Supply Kit
    • ACAD Frozen Blood Shipping Supply Kit (SMALL)
    • ACAD Frozen Blood Shipping Supply Kit (LARGE)
    • ACAD Frozen Blood Shipping Supply Kit (International Sites)
  • Saliva Kits:
    • ACAD Saliva Collection Kit
    • ACAD Saliva Batch Shipping Kit
    • ACAD REMOTE Saliva 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 **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.
Blood Collection Schedule

NCRAD
National Centralized Repository for Alzheimer’s Disease and Related Dementias
# ACAD Blood-Based Biomarker Collection Schedule

<table>
<thead>
<tr>
<th>Sample Type</th>
<th>Tube Type</th>
<th>Number of Tubes Supplied in Kit</th>
<th>Aliquot Volume</th>
<th>Tubes to NCRAD</th>
<th>Ship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole blood for isolation of serum</td>
<td>Serum Separator (Gold-Top) Blood Collection Tube (5 mL)</td>
<td>1</td>
<td>N/A</td>
<td>2</td>
<td>Frozen</td>
</tr>
<tr>
<td></td>
<td>SERUM: 2.0 mL cryovials</td>
<td>2</td>
<td>1.5 mL serum aliquot per 2.0 mL cryovial (red-cap and blue-cap residual)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whole blood for isolation of plasma &amp; buffy coat (for DNA extraction)</td>
<td>EDTA (Purple-Top) Blood Collection Tube (2 x 10 mL)</td>
<td>2</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>PLASMA: 2.0 mL cryovials with purple-cap (residual volume placed in 2.0 mL cryovial with blue cap)</td>
<td>7</td>
<td>1.5 mL plasma aliquot per 2.0 mL cryovial (purple-caps and blue-cap residual)</td>
<td>7</td>
<td>Frozen</td>
</tr>
<tr>
<td></td>
<td>BUFFY COAT: 2.0 mL cryovial</td>
<td>2</td>
<td>1.0 mL buffy coat aliquot per 2.0 mL cryovial (gray-cap)</td>
<td>2</td>
<td>Frozen</td>
</tr>
</tbody>
</table>
Blood Specimen Labels
Provided by NCRAD
Four Label Types

- Kit Number Labels
  - Kit Number: 448945
- PTID Labels
  - PTID:
- Collection Tube Labels
  - ACAD
  - 0042664008
  - PLASMA
  - Kit #: 448945
- Cryovial Labels
  - ACAD
  - Plasma
  - Kit #: 448945
Kit Number 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 C)
  2. Lid of cryobox that houses aliquot tubes during storage and shipment
  3. One extra label provided

Kit Number: 448945

Appendix C
Blood Sample and Shipment Notification Form
• Participants will be identified by their PTID.
  • The PTID may only be available shortly before the visit

• 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

• Label will be placed on all collection tubes:
  • 1 x Serum Separator (Gold-Top) Blood Collection Tube (5 mL)
  • 2 x EDTA (Purple-Top) Blood Collection Tubes (10 mL)
Collection Tube Labels

- **Collection Tube Labels have 4 components:**
  - Study name
  - 10-digit specimen number (assigned by NCRAD)
  - Specimen type
  - Kit number (assigned by NCRAD)
    - Unique to participant AND visit

- **Label will be placed on all collection tubes:**
  - 1 x Serum Separator (Gold-Top) Blood Collection Tube (5 mL)
  - 2 x EDTA (Purple-Top) Blood Collection Tubes (10 mL)
Cryovial Labels

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

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

Label 1: Collection Tube Label

- ACAD 0042664008 SERUM
  Kit #: 448945

- ACAD 0042664008 PLASMA
  Kit #: 448945

Label 2: PTID Label

- PTID: __________

Images:
- Serum Separator (Gold-Top) Blood Collection Tube (5 mL)
- EDTA (Purple-Top) Blood Collection Tube (10 mL)
Properly Labeling Biologic Samples:

Please...

- Label all collection and cryovial tubes **before** cooling, collecting, processing or freezing samples.

- Label only 1 participant’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 Blood Specimens
Serum, Plasma and Buffy Coat
Site Required Equipment

Blood Collection/Safety Equipment

- Personal Protective Equipment: lab coat, nitrile/latex gloves, safety glasses
- Tourniquet
- Alcohol Prep Pad
- Gauze Pad
- Bandage
- Butterfly needles and hub
- Microcentrifuge tube rack
- Sharps bin and lid
- Wet Ice Bucket
- Wet Ice
- Pelleted dry ice

Processing/Storage/Shipping Equipment

1. Centrifuge capable of ≥ 2000 rcf with refrigeration to 4°C
2. -80°C Freezer
3. Wet Ice Bucket
4. Pelleted dry ice (~45 lbs. per shipment)

Remote Blood Collections ONLY:
1. Cold pack chilled at 4°C
2. Paper towel to wrap ice pack
## Blood Collection Tubes

<table>
<thead>
<tr>
<th>Tube Type</th>
<th>Number of Tubes Drawn</th>
<th>Tube Image</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum Separator (Gold-Top) Blood Collection Tube (5 mL) for Serum</td>
<td>X 1</td>
<td><img src="image1.png" alt="Image" /></td>
</tr>
<tr>
<td>EDTA (Purple-Top) Blood Collection Tube (10 mL) for Plasma and Buffy Coat</td>
<td>X 2</td>
<td><img src="image2.png" alt="Image" /></td>
</tr>
<tr>
<td>Cap Color</td>
<td>Sample Type</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>-------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Red-Cap</td>
<td>Serum</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.5 mL serum aliquots per 2.0 mL cryovial</td>
<td></td>
</tr>
<tr>
<td>Blue-Cap</td>
<td>Serum and Plasma Residual</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Residual volume placed in 2.0 mL cryovial</td>
<td></td>
</tr>
<tr>
<td>Purple-Cap</td>
<td>Plasma</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.5 mL plasma aliquots per 2.0 mL cryovial</td>
<td></td>
</tr>
<tr>
<td>Gray-Cap</td>
<td>Buffy Coat</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.0 mL buffy coat aliquot per 2.0 mL cryovial</td>
<td></td>
</tr>
</tbody>
</table>
Serum Collection

- 1 x Serum Separator (Gold-Top) Blood Collection Tube (5 mL) for Serum
- Create up to (2) 1.5 mL serum aliquots to be shipped to NCRAD
  - If residual aliquot created, document specimen number and volume on sample form

48 slot cryobox with 2.0 mL cryovials – sent to NCRAD

Close up of 2.0 mL Serum Aliquot

SST immediately after blood draw.

SST immediately following the centrifuge.
Serum Separator (Gold-Top) Blood Collection Tube (5 mL) for Serum x 1

**Step 1**
- Store tubes at room temperature.
- Label Collection Tube and Cryovials with pre-printed labels prior to blood draw.

**Step 2**
- Collect blood in (1) 5 mL Gold-Top tube, allowing blood to flow for 10 seconds and ensure blood flow has stopped.

**Step 3**
- Immediately after blood draw, invert tube 5 times to mix samples.

**Step 4**
- Allow blood to clot at room temperature by placing it upright in a vertical position in a tube rack for 30 minutes.

**Step 5**
- Using a clean pipette, aliquot 1.5 mL of serum from SST tube to pre-labeled red-cap serum cryovial.
- If residual aliquot is created in pre-labeled blue-cap serum cryovial, document specimen number and volume on sample form.
- Store serum aliquots upright at -80°C until shipment to NCRAD.

**Step 6**
- Within 2 hours of blood draw, centrifuge samples at 2000 x g at 4°C for 10 minutes.

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

• 2 x EDTA (Purple-Top) Blood Collection Tube (10 mL)
• Create up to (7) 1.5 mL plasma aliquots to be shipped to NCRAD
  • If residual aliquot created, document specimen number and volume on sample form

48 slot cryobox with 2.0 mL cryovials – sent to NCRAD

Close up of 2.0 mL Plasma Aliquot

NOTE: When pipetting plasma from the plasma tube into the 15 mL conical tube, be very careful to pipette the plasma top layer only, leaving the buffy coat and the red blood cell layers untouched.
Buffy Coat Collection

- 2 x EDTA (Purple-Top) Blood Collection Tube (10 mL)
  - Create up to (2) 1.0 mL buffy coat aliquots to be shipped to NCRAD
    - Expected to have a reddish color from the RBCs.
    - Be sure to only place the buffy coat from one EDTA tube into each gray cryovial

NOTE: When pipetting plasma from the plasma tube into the 15 mL conical tube, be very careful to pipette the plasma top layer only, leaving the buffy coat and the red blood cell layers untouched.

48 slot cryobox with 2.0 mL cryovials – sent to NCRAD
EDTA (Purple-Top) Blood Collection Tube (10 mL) for Plasma and Buffy Coat x 2

**Step 1**
- Store tubes at room temperature.
- Label Collection Tube and Cryovials with pre-printed labels prior to blood draw.

**Step 2**
- Collect blood in (2) 10 mL Purple-Top tube, allowing blood to flow for 10 seconds and ensure blood flow has stopped.

**Step 3**
- Immediately after blood draw, invert tube 8-10 times to mix samples.

**Step 4**
- Immediately after inverting the EDTA tubes, place them on wet ice until centrifugation begins.
- Within 2 hours of blood draw, centrifuge samples at 2000 x g at 4°C for 10 minutes.

**Step 5**
- Using a clean pipette, transfer plasma from both 10 mL EDTA tubes into the 15 mL conical tube.
- Mix the plasma by gently inverting the conical tube 3 times.

**Step 6**
- Using a clean pipette, aliquot 1.5 mL of plasma from the 15 mL conical to pre-labeled purple-cap plasma cryovials.
- If residual aliquot is created in pre-labeled blue-cap plasma cryovial, document specimen number and volume on sample form.
- Store plasma aliquots upright at -80°C until shipment to NCRAD.

**Step 7**
- Using a clean pipette, transfer each buffy coat layer from EDTA tubes to pre-labeled gray-cap buffy coat cryovials (do not pool buffy coats).
- Store buffy coat aliquots upright at -80°C until shipment to NCRAD.

**Important Note:** Ensure all tubes are not expired prior to collection and processing of samples.
If remote draw,

• Keep the samples on 4°C cold pack until you reach the lab for processing.
Incomplete and Difficult Blood Draws

***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.

If blood redraw is not possible, attempt to collect saliva sample to obtain DNA.
Situations may arise that prevent study coordinators from obtaining the total amount scheduled for biospecimens. In these situations, please follow the below steps:

1. **If the biospecimens 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 blood biospecimens at a scheduled visit are not collected:**
   1. See Section 10.0 Saliva Collection for instructions on how to collect saliva samples.
Frozen Packaging and Shipping Instructions
Serum, Plasma and Buffy Coat

IMPORTANT!
FROZEN SAMPLES MUST BE SHIPPED MONDAY-WEDNESDAY ONLY!
MONDAY-TUESDAY FOR INTERNATIONAL SITES!
# Blood Sample Shipment Summary

<table>
<thead>
<tr>
<th>Sample Type</th>
<th>Processing/ Aliquoting</th>
<th>Tubes to NCRAD</th>
<th>Ship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole blood (Gold-Top SST) for isolation of serum</td>
<td>1.5 mL serum aliquot per 2.0 mL cryovial (red-cap)</td>
<td>Up to 2</td>
<td>Frozen</td>
</tr>
<tr>
<td></td>
<td>Residual volume placed in 2.0 mL cryovials (blue-cap)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whole blood (Purple-Top EDTA) for isolation of plasma &amp; buffy coat (for DNA extraction)</td>
<td>1.5 mL plasma aliquot per 2.0 mL cryovial (purple-cap)</td>
<td>Up to 7</td>
<td>Frozen</td>
</tr>
<tr>
<td></td>
<td>Residual volume placed in 2.0 mL cryovials (blue-cap)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.0 mL buffy coat aliquot per 2.0 mL cryovial (gray-cap)</td>
<td>Up to 2</td>
<td>Frozen</td>
</tr>
</tbody>
</table>
Notify NCRAD When Samples Ship:

1. **Notify NCRAD of shipment** by emailing NCRAD coordinators at: alzstudy@iu.edu
   - Attach the completed Blood Sample and Shipment Notification Form to the email notification. (See Appendix C for an example of the NCRAD sample form)
   - Please include the tracking number in the body of the email.
   - **If email is unavailable, please call NCRAD and do not ship until you’ve contacted and notified NCRAD coordinators about the shipment in advance.**
   - Place the completed Blood Sample and Shipment Notification Form (Appendix C) in the package on top of the Styrofoam lid for each patient specimen.
Frozen Shipment Packaging:
Place all frozen labeled aliquots of serum, plasma and buffy coat in the cryoboxes.

Place up to 2 serum, 7 plasma and 2 buffy coat cryovials per participant visit inside 48 cell cryobox. Place cryobox in the clear plastic biohazard bag (do NOT remove the absorbent material found in the bag) and seal according to the instructions on the bag to ship to NCRAD frozen.
Frozen Batch Shipping

- Batch shipping should be performed every 3 months or when specimens from 8 participants accumulates, whichever is sooner.

Large Frozen Shipper:
** 45 lbs. of dry ice pellets
AND
Fits up to 8 x 48-slot cryoboxes

Small Frozen Shipper:
** 10 lbs. of dry ice pellets
AND
Fits up to 2 x 48-slot cryoboxes
Frozen Shipment Packaging

- Place 2-3 inches of pelleted 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 pelleted dry ice in the provided shipper.
- Each Styrofoam shipper must contain about 45 lbs (20 kg) of pelleted dry ice.
- Fill shipper to the top with pelleted dry ice!
Frozen Shipping
Dry Ice
Requirements

Failure to do the following will result in shipping carrier rejecting/returning your package!

1. Net weight of pelleted dry ice in kg (must match amount on the airbill)!
2. Dry Ice label should not be covered with other stickers and must be completed (see right)!
Critical Frozen Shipping Instructions

1. Hold packaged samples in -80°C freezer until time of pick-up/drop-off.

2. Frozen shipments should be shipped Monday - Wednesday ONLY to avoid shipping delays on Thursday or Friday. **Monday - Tuesday for INTERNATIONAL SITES!**
   BE AWARE OF HOLIDAYS and current weather conditions!

3. Notify NCRAD of sample shipment the day you ship for tracking purposes.

4. Remember to complete the requisition forms and include a copy in your shipment with the samples: Blood Sample and Shipment Notification (Appendix C).

5. **Do not ship blood in same container as saliva as the saliva should be at ambient temperature and not frozen.**
Saliva Collection

National Centralized Repository for Alzheimer’s Disease and Related Dementias
Saliva Collection Schedule

**If not able to collect blood samples for a participant, Saliva can be collected for DNA extraction**
## ACAD Saliva Collection Schedule

<table>
<thead>
<tr>
<th>Sample Type</th>
<th>Tube Type</th>
<th>Number of Tubes Supplied in Kit</th>
<th>Tubes to NCRAD</th>
<th>Volume</th>
<th>Ship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saliva for DNA extraction</td>
<td>Oragene Saliva Collection Tube (OG-500)</td>
<td>1</td>
<td>1</td>
<td>2.0 mL of Saliva collected in each 4.0 mL tube</td>
<td>Ambient</td>
</tr>
</tbody>
</table>
Saliva Specimen Labels

Provided by NCRAD
Two Label Types

PTID Labels

Specimen Labels
• participants will be identified by their PTID.
  • The PTID may only be available shortly before the visit

• 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

• Label will be placed on all collection tubes:
  • Oragene Saliva Collection Tube (OG-500)
Specimen Labels

- Specimen Labels have 4 components:
  - Study name
  - 10-digit specimen number (assigned by NCRAD)
  - Specimen type
  - Kit number (assigned by NCRAD)
    - Unique to participant AND visit

- Label will be placed on all collection tubes:
  - Oragene Saliva Collection Tube (OG-500)
  - Saliva Sample and Shipment Notification Form (Appendix D)
Oragene Saliva Collection Tube Labels:

Label 1: Specimen Label

0042664008
SALIVA
Kit #: 448945

Label 2: PTID Label

PTID:

Specimen Label

PTID Label

Labeled Oragene Saliva Collection Tube
Properly Labeling Saliva Samples:

Please...

• Label saliva tubes before sample collection.

• Label only 1 participant’s tubes at a time to avoid mix-ups.

• Wrap the label around the tube horizontally. Place barcode toward the tube cap AND below the “Fill To” line.
  • Label position is important for all tube types.

• Make sure the label is completely adhered by rolling between your fingers.
Handling/Processing Study Saliva Specimens
# Saliva Collection Kit

<table>
<thead>
<tr>
<th>Tube Type</th>
<th>Number of Tubes Drawn</th>
<th>Kit Image</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oragene Saliva Collection Tube (OG-500) – DNA Kit</td>
<td>X 1</td>
<td></td>
</tr>
</tbody>
</table>
Critical Saliva Collection Instructions:

• Do NOT remove plastic film from the lid.

• Participant should not eat, drink, smoke, chew gum or brush teeth for 30 minutes prior to giving sample.

• Participant does NOT need to rinse their mouth prior to giving the sample.

• Do not over-fill the saliva tube as tubes can leak during shipment, resulting in a loss of sample.
Saliva Collection Preparation Tips:

• Most people take between 2 and 5 minutes to deliver a saliva sample. If the participant finds it difficult to produce a sample, instruct them to relax and rub their cheeks gently for 30 seconds to generate saliva.

• Some other helpful hints to increase saliva output:
  • Hydrate before collection. Drink at least one large glass of water prior to collection – must be done at least 30 minutes prior to collection (be mindful to explain they should not eat/drink 30 minutes before giving the sample).
  • Smelling appealing aromas, such as citrus fruits, can help with saliva production
  • Telling participant to take their time filling the tube. Most participants take just a few minutes to complete, but those with dry mouth might need to take longer and shouldn’t feel rushed.
Saliva Collection Procedure:

Saliva Collection Instructions - (link)

1) Do NOT remove the plastic film from the lid of the container. Spit into funnel until the amount of liquid saliva (not including bubbles) reaches the fill line shown in picture #1. Note: The saliva tube has a false bottom, so you will only need to provide 2 ml of saliva to reach the fill line. **Do NOT fill above the line.**

2) After collection, hold the tube upright with one hand and close the funnel lid with the other hand (as shown) by firmly pushing the lid until you hear a loud click. The liquid in the lid will be released into the tube to mix with the saliva. Make sure that the lid is closed tightly.

3) Hold the tube upright. Unscrew the funnel from the tube.

4) Pick up the small cap for the tube. Use the small cap to close the tube tightly. Discard the funnel.

5) Shake the capped tube for 5 seconds.

6) Complete the Saliva Sample and Shipment Notification Form(s) (Appendix D) and include in shipment with saliva sample(s).

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

• The following training video is available to assist you with the saliva collection:

http://www.dnagenotek.com/ROW/support/ciOG500.html
Ambient Packaging and Shipping Instructions

Saliva

<table>
<thead>
<tr>
<th>IMPORTANT!</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMBIENT SAMPLES MUST BE SHIPPED MONDAY-THURSDAY ONLY!</td>
</tr>
</tbody>
</table>
Notify NCRAD When Samples Ship:

1. **Notify NCRAD of shipment** by emailing NCRAD coordinators at: alzstudy@iu.edu

   ➢ Attach the following to the email:

   - Completed Saliva Sample and Shipment Notification Form to the email notification. (See Appendix D for an example of the NCRAD sample form)
   - If email is unavailable, please call NCRAD and do not ship until you’ve contacted and notified NCRAD coordinators about the shipment in advance.
   - Please include the tracking number in the body of the email.
   - Place physical copy of the filled out Saliva Sample and Shipment Notification (Appendix D) in your shipment.
Ambient Shipping Instructions: Saliva

1. Place saliva sample into the provided biohazard bag with absorbent sheet. Seal biohazard bag according to the instructions on the bag.
2. Roll packaging around the tube and place sample into the provided Bulk Saliva Shipping Box for batch shipping.
3. Place bulk shipping box containing 36 saliva samples inside UPS ClinPak.
4. Place Exempt Human Specimen label and UPS shipping airbill on the outside of the ClinPak ensuring no labels are covered.
5. Include completed Saliva Sample and Shipment Notification Form(s) (Appendix D) inside ClinPak with samples.
6. Use UPS tracking to ensure delivery occurs.
Ambient Saliva Shipping Instructions – Remote Draws:

1. If remote draw, place sample inside biohazard bag with absorbent sheet and then place inside small bubble mailer.
2. Place Exempt Human Specimen label and prepaid USPS shipping airbill on the outside of the bubble mailer ensuring no labels are covered.
3. Include completed Saliva Sample and Shipment Notification Form (Appendix D) inside bubble mailer with sample.
Critical Ambient Shipping Instructions

Saliva

1. **SHIP ALL AMBIENT SAMPLES MONDAY - THURSDAY ONLY. BE AWARE OF HOLIDAYS.**

BE AWARE OF INCIPIENT INCLEMENT WEATHER THAT MAY DELAY SHIPMENT/DELIVERY OF SAMPLES.

2. Notify NCRAD of sample shipment the day you ship for tracking purposes.

3. Place physical copy of the completed Saliva Sample and Shipment Notification Form(s) (Appendix D) inside the ClinPak or bubble mailer.

4. **Do not ship saliva in same container as blood as the saliva should be at ambient temperature and not frozen.**
Creating Airbills/Scheduling Pickups via ShipExec
Frozen and Ambient Shipments
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 Group 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)

- **Ambient shipments**
  - Enter the total weight of your package in the “Weight” field and leave the “Dry Ice Weight” field empty.
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”.
  • “Earliest Time Ready” has to be after current time of day even if scheduling pickup for later date.
  • Users will get an error if attempting to schedule pick-up after institution’s closing time.
• 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 upon request).
- 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></td>
<td>6683830</td>
<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.
International Shipping Instructions
1. Log into the ShipExec™ Thin Client at ShipExec™ Thin Client.

2. All international shipments will utilize the same packing requirements as specified in Section 9.0 and Section 10.5 (slides 62-68) (Frozen and Ambient Shipping Instructions).

3. Two components are necessary for international shipments:
   1. International UPS return airbill
   2. International Commercial Invoice
International Shipping Instructions – ShipExec (cont.)

1. Follow ShipExec™ Frozen and Ambient Shipping Instructions, steps 1 – 7, specified in Section 9.2 and Section 10.5.2. (Slides 62-68):
   a. Once you click ‘Ship’, the following documents will automatically be created/downloaded:
      i. UPS Package Label
      ii. UPS Commercial Invoice
      iii. ShipExec™ Return Shipment Receipt
Commercial Invoice:

1. Open the UPS Commercial Invoice:
   1. Ensure all information is correct.
   2. Fill in the harmonization code (see below example):

<table>
<thead>
<tr>
<th>Units</th>
<th>U/M</th>
<th>Description of Goods/Part No.</th>
<th>Harm. Code</th>
<th>C/T/O</th>
<th>Unit Value</th>
<th>Total Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PC</td>
<td>Biological Specimens</td>
<td>3002.12.00.90</td>
<td>CA</td>
<td>150</td>
<td>150</td>
</tr>
</tbody>
</table>

   i. Human Serum, Plasma and Buffy Coat: 3002.12.00.90

   OR

   i. Human Saliva: 3002.90.90

3. Enter the following in ‘Additional Comments’ section:
   i. Reason for export: Medical Research. Samples are for laboratory research purposes only and are not for use in live human nor animal research. Samples are non-dangerous, non-toxic, and non-infectious. Samples not intended for human nor animal consumption. This shipment does not contain animal products or byproducts. I declare that the information mentioned above is true and correct to the best of my knowledge.
Printing Commercial Invoice and Airbill:

1. Print, sign and date 3 copies of the UPS Commercial Invoice. Fold in half.
   i. Use black or blue pen only

2. Print 1 copy of UPS Package Label (airbill). Fold in half.

3. Place airbill on top of 3 completed copies of the commercial invoice. Place papers inside an airbill sleeve and adhere to the shipping box.
Critical International Shipping Instructions

1. SHIP ALL AMBIENT SAMPLES MONDAY - THURSDAY ONLY. BE AWARE OF HOLIDAYS.

2. INTERNATIONAL SITES SHIP ALL FROZEN SAMPLES MONDAY - TUESDAY ONLY. BE AWARE OF HOLIDAYS.

3. BE AWARE OF INCIPIENT INCLEMENT WEATHER THAT MAY DELAY SHIPMENT/DELIVERY OF SAMPLES.

4. Notify NCRAD of sample shipment the day you ship for tracking purposes.

5. Place physical copy of the completed Sample and Shipment Notification Form(s) inside the ClinPak or bubble mailer.

6. Do not ship saliva in same container as blood as the saliva should be at ambient temperature and not frozen.
Frozen Shipping
Dry Ice
Requirements

Failure to do the following will result in shipping carrier rejecting/returning your package!

1. Net weight of pelleted dry ice in kg (must match amount on the airbill)!
2. Dry Ice label should not be covered with other stickers and must be completed (see right)!
Additional Resources:

- UPS International Customer Service Center: 1-800-782-7892
- Commercial Invoice How-to Guide
### Example International Commercial Invoice

#### INVOICE

**FROM**
- Tax ID/No.: [Redacted]
- Contact Name: [Redacted]
- Economic Nova,
  ON, N9X 1A1
- CA
- Phone: [Redacted]

**SHIP TO**
- Tax ID/No.: [Redacted]
- Contact Name: [Redacted]
- Endasapexile
  24-4290
- DE
- Phone: [Redacted]

#### Shipment ID
- [Barcode]
- [Redacted]

#### Invoice No.
- [Redacted]

#### Date
- 23/12/2023

#### Terms of Sale/Incoterm
- [Redacted]

#### Reason for Export
- [Redacted]

<table>
<thead>
<tr>
<th>Units</th>
<th>U/M</th>
<th>Description of Goods/Part No.</th>
<th>S/N</th>
<th>Code</th>
<th>Unit Price</th>
<th>Total Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>D/C</td>
<td>Biological Specimen</td>
<td>1102.12.00.00</td>
<td>CA</td>
<td>116</td>
<td>350</td>
</tr>
</tbody>
</table>

**Additional Comments:**
- Reason for Export: Medical Research. Samples are for laboratory research purposes only and are not for use in live human or animal research. Samples are non-aggressive, non-toxic, and non-infectious. Samples are not intended for human or animal consumption. This document does not contain animal products or byproducts. I declare that the information mentioned above is true and correct to the best of my knowledge.

**Declaration Statement:**
- The exporter of the products covered by this document declares that except where otherwise clearly indicated the products are of CCA preferential origin.

**Invoice Line Item:**
- Total: [TOTAL]
  - Freight: [Freight]
  - Insurance: [Insurance]
  - Other: [Other]

**Shipped By:**
- Jamie Doe
- Date: 11/03/2023

**Total Number of Packages:** 1

**Total Weight:** [Weight]

**These items are controlled by the U.S. Government and authorized for export only to country of ultimate destination for use by the ultimate consignee or end-user(s) herein identified. They may not be resold, transferred, or otherwise disposed of, to any other country or to any person other than the authorized ultimate consignee or end-user(s), either in their original form or after being incorporated into other items, without first obtaining approval from the U.S. government or as authorized by U.S. law and regulations.**
Sample Forms
Appendix A: GUID Demographics Form

Please be certain to collect the following demographic information to generate a Global Unique Identifier. **Do NOT** return this information to NCRAD. Only send the GUID to NCRAD.

1. Complete legal given (first) name of subject at birth: ________________________________
2. Complete additional (middle) name or names at birth: ________________________________
3. Complete legal family (last) name of subject at birth: ________________________________
4. Suffix: ______________
5. Date of Birth: ______________
6. Name of city/municipality in which subject was born: ________________________________
7. Country of birth: ________________________________

See slides 4-6 or Section 4.0 of the Manual of Procedures for more information.
Appendix B: Rate of Centrifuge Worksheet

You are not required to send this to the NCRAD Study Coordinator. This is a tool to help calculate rate of centrifuge.

Appendix B: Rate of Centrifuge Worksheet

Please complete and return this form by fax or email to the NCRAD Project Manager if you have any questions regarding sample processing. The correct RPM will be sent back to you. You can also use online calculators like this one - https://www.sigmaaldrich.com/CA/envsupport/calculators-and-apps/g-force-calculator

For this, you will need
RPM
Radius of rotor – Distance from center to middle of bucket

Submitter Information
Name: 
Submitter e-mail:

Site:

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:

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

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
alzstudy@iu.edu
Appendix C: Blood Sample and Shipment Notification Form

Note: Please ensure forms are filled out in their entirety. Complete during the participant study visit as samples are processed to guarantee accuracy.

Send by E-mail prior to shipment, and include a copy in each shipment.
# ACAD Blood Form Guide

**Appendix C**

**Site ID:** 3-digit Site Number

**Participant ID:** 5-digit Participant Number

**Coordinator Contact Information and Sample Tracking Information**

If the participant is co-enrolled in the ADRC study, please check the “ADRC” box and fill in the ADRC Patient ID in the “ADRC PT ID” field.

If the ACAD participant is co-enrolled in a study other than ADRC, please check this box.

**Place Kit Number label here (Section 7.1 of MOP)**

**Enter time and date of blood collection in HHMM format.**

**Enter last date and time participant ate in HHMM format.**

**Enter time centrifugation started in HHMM format.**

**Enter duration of centrifugation in minutes (i.e., 10 minutes).**

**Enter the time the samples were aliquoted in HHMM format.**

**Enter the number of 1.5 ml serum aliquots that were created.**

**Enter the volume in mL of the residual serum aliquot (if applicable).**

---

### Blood Sample and Shipment Notification Form

#### General Information:
- **From:**
- **Date:**
- **Time:**
- **To:**
- **Phone:**

#### Study Information:
- **ACAD U19**
- **ADRC**
- **ADRC PT ID:** (if applicable)

#### Visit Information:
- **Visit (circle number):** 1, 2, 3, 4, 5
- **Visit (circle letter):** a, b, c, d, e
- **Kit:**
- **KIT LABEL/ BARCODE:**

#### Blood Collection:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Drawn</td>
<td>[MMDDYY]</td>
</tr>
<tr>
<td>Time of Draw</td>
<td>[HHMM]</td>
</tr>
<tr>
<td>Last date subject ate</td>
<td>[MMDDYY]</td>
</tr>
<tr>
<td>Last time subject ate</td>
<td>[HHMM]</td>
</tr>
</tbody>
</table>

#### Blood Processing:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temp of Centrifugation</td>
<td>°C</td>
</tr>
<tr>
<td>Duration of Centrifugation</td>
<td>Minutes</td>
</tr>
<tr>
<td>Time of Time</td>
<td>[HHMM]</td>
</tr>
<tr>
<td>Temp of Storage</td>
<td>°C</td>
</tr>
<tr>
<td>Duration of Storage</td>
<td>Minutes</td>
</tr>
<tr>
<td>Time of Storage</td>
<td>[HHMM]</td>
</tr>
</tbody>
</table>

#### Notes:
- [E.g., comments, issues, etc.]

---

**Enter GUID here. (Section 4.0 of MOP)**

**Check box next to the Participant’s Sex (M = Male, F = Female)**

**Enter the participant’s Year of Birth**

**Circle Visit Number**
- 1 = Year 1 (newly enrolled)
- 2 = Year 2
- 3 = Year 3
- etc.

**Circle Visit Letter**
- a = First visit of the year
- b = Second visit of the year
- c = Third visit of the year
- etc.

**Enter temperature of centrifugation (i.e., 4°C) and rate of centrifugation (i.e., 2000 x g)**

**Enter the last 4-digits of the residual serum aliquot (if applicable)**

**Enter the original blood volume drawn in each SST (Gold-Top) Collection Tube (Sml) in mL.**
Appendix D: Saliva Sample and Shipment Notification Form

Note:
Please ensure forms are filled out in their entirety. Complete during the participant study visit as samples are processed to guarantee accuracy.

Send by E-mail prior to shipment, and include a copy in each shipment.
Noncomformance Issues
Nonconformance Issues

Sample aliquots and collection tubes frozen at an angle/inverted

Recommendation: Place aliquots in cryoboxes/tube rack in freezer upright until shipment.

Fields left blank on Blood Sample and Shipment Notification Form

- Last time participant ate often left blank/unknown

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

Incorrect data reported on Sample and Shipment Notification Forms
Nonconformance Issues (cont.)

- 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
ACAD BLOOD-BASED BIOMARKER COLLECTION SCHEDULE

<table>
<thead>
<tr>
<th></th>
<th>All Visits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum</td>
<td>V</td>
</tr>
<tr>
<td>DNA</td>
<td>V</td>
</tr>
<tr>
<td>Plasma</td>
<td>V</td>
</tr>
</tbody>
</table>

ACAD SALIVA-BASED BIOSPECIMEN COLLECTION SCHEDULE

<table>
<thead>
<tr>
<th></th>
<th>All Visits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DNA</td>
<td>V</td>
</tr>
</tbody>
</table>

Study Resources
NCRAD Website: Helpful Pages

NCRAD - The ACAD Active Study Page

https://ncrad.org/contact/hours/holiday-closures

https://ncrad.org/contact/hours/shipping-resources

**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</td>
<td>Martin Luther King, Jr. Day</td>
</tr>
<tr>
<td>4th Monday</td>
<td>Memorial Day</td>
</tr>
<tr>
<td>4th Tuesday</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>

*Please Note:* Between December 24th and January 2nd, Indiana University will be open Monday through Friday for essential operations only and will be open for normal operations on January 2nd. If at all possible, biological specimens for submission to Indiana University should NOT be collected and shipped to Indiana University after the second week of December. Should the necessary to ship blood samples for DNA extraction to Indiana University during this period, please contact the Indiana University staff before December 20th by e-mailing selig@indiana.edu, so that they can arrange to have staff available to process incoming samples.

*Please Note:* Courier services may observe a different set of holidays. Please be sure to verify shipping dates with your courier prior to any holiday.

**SHIPPING RESOURCES**

**Shipping Address**

NCRAD
Indiana University School of Medicine
302 W 309 N W 207
Indianapolis, IN 46202

**UPS Shipping Resources**

To generate an airbill and schedule UPS packages for shipments to NCRAD, please visit the UPS ShipExe™ Thin Client website. For instructions on how to use the UPS ShipExe™ Thin Client website, please refer to the NCRAD UPS ShipExe™ Thin Client Guide.