



*Post-TBI Sleep Disruption in the Development of CTE and
Alzheimer's Disease-Related Neuropathology (GlimpseTBI)*

BIOSPECIMEN COLLECTION & PROCESSING

Overview

1. Specimen uniformity and quality
2. Site Equipment
3. Procedures
 - Kit Ordering
 - Sample Labels
 - Sample Collection and Processing
 - Shipping Closures
4. Contact Information

Specimen Uniformity and Quality

Most biomarkers are sensitive to *time* and *temperature*

- Standardization of processing across sites is key
- Reference the *BioSEND Specimen Collection, Processing, and Shipment Manual* as needed
- Do not replace or supplement any kit components without first receiving approval from BioSEND/NINDS

Questions? Email biosend@iu.edu

Site Equipment

Sites will need to supply the following items:

Phlebotomy

- Gloves
- Alcohol wipes
- Butterfly needles
- Tourniquet
- Gauze pads
- Bandages
- Sharps bin and lid



Site Equipment

Sites will need to supply the following items:

Processing

- Crushed ice
- Microcentrifuge tube rack
- Calibrated pipettes and pipette tips
- Centrifuge capable of maintaining 4°C
- -80°C Freezer
- Dry ice



Collection Protocol

Visit & Sample Type	V1	V2
Plasma aliquots, 1.5ml	3	3
Serum aliquots, 1.5ml	3	3
Buffy Coat	1	1
Whole Blood, 3ml	1	1
CSF aliquots*, 1.0ml	5	5

*CSF is collecting using site protocol and is not included in this training.

Kit Ordering – Biosend.org

The screenshot displays the Biosend.org website interface. At the top, the NINDS BioSEND logo is on the left, followed by navigation tabs: "Accessing Biospecimens", "Banking Samples", "Active Studies", and "About BioSEND". Below these tabs is a grid of links. The "Active Studies" tab is highlighted, and a callout box points to the "Study Resources" links under it. At the bottom, three statistics are shown: 10,237 Subjects Enrolled, 51 Total Studies, and 228,341 Site-submitted Samples.

Accessing Biospecimens	Banking Samples	Active Studies	About BioSEND
AJPD Study Resources	EpiBioS4Rx Study Resources	PHD3 Study Resources	Holiday Closures
BioHOBIT Study Resources	GlimpseTBI Study Resources	PSP Study Resources	Shipping Information
BraCE-DM2 Study Resources	JoHD Study Resources	SBPD Study Resources	Sample Shipment Form
CARE4Kids Study Resources	LBD Study Resources	CRC-SCA Study Resources	Withdrawn Subject Notification
CHANGE-HD Study Resources	LETBI Study Resources	READISCA Study Resources	
DLB Study Resources	MBPS Study Resources	SPARX3 Study Resources	
DVRP Study Resources	PBS Study Resources	Udall Study Resources	

Under "Active Studies", select the Study Resource page for your protocol

10,237
Subjects Enrolled

51
Total Studies

228,341
Site-submitted Samples

Kit Ordering

Direct link to ordering system :

<http://kits.iu.edu/biosend/glimpseTBI>

On the Study Resources Page, follow Kit Request Module link

NINDS BioSEND Accessing Biospecimens Banking Samples Active Studies About BioSEND

Post-TBI Sleep Disruption in the Development of CTE and Alzheimer's Disease-Related Neuropathology (GlimpseTBI) Study Page

Welcome GlimpseTBI Study staff, coordinators, and PIs. This section encompasses study specific tools and resources for your reference. If you have any questions, please contact biosend@iu.edu.

Specimen Table

Cohort	Population	Plasma	Genomic DNA	CSF	Serum
GlimpseTBI	Veterans >45 years of age with history of mTBI	✓	✓	✓	✓

[Study Resources](#)

Downloads

- [GlimpseTBI Manual of Procedures](#)
- [GlimpseTBI Training Slides](#)

Additional Resources

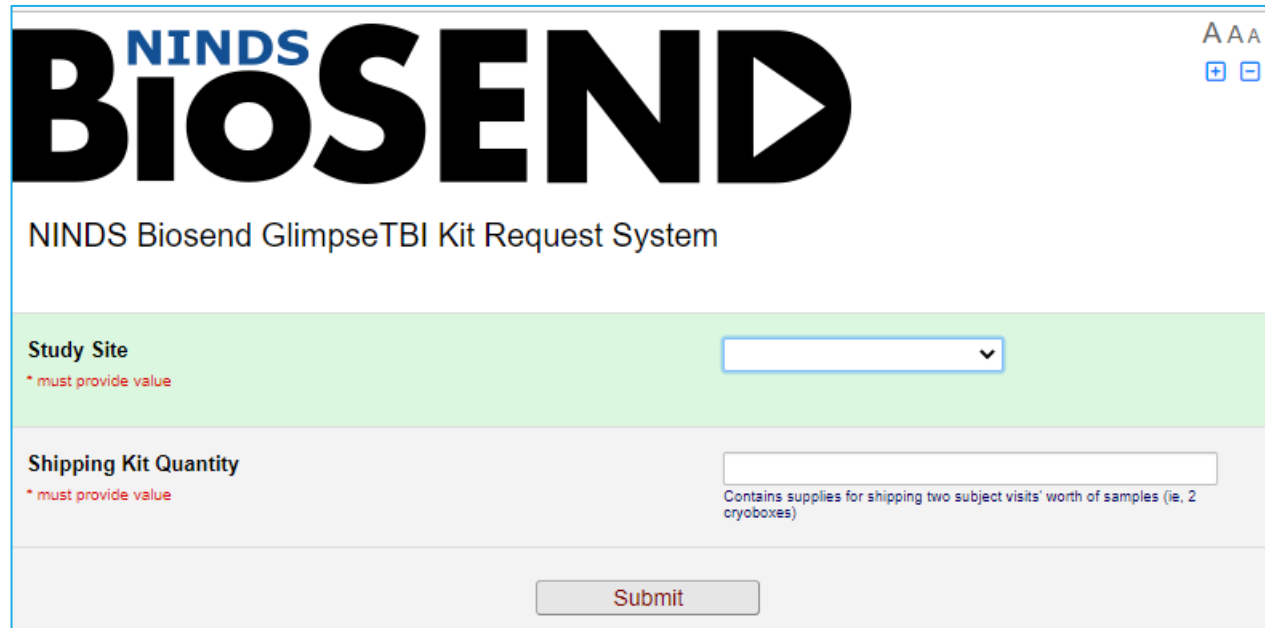
- [Online Sample Form](#)

Contact Us

biosend@iu.edu
317-278-0594

Kit Ordering

- Study Kits and extra supplies can be ordered via the Kit Request Module
- Please allow two weeks for delivery of kits. We recommend keeping an extra kit on hand for last minute visits.



The screenshot shows the NINDS Biosend GlimpseTBI Kit Request System interface. At the top left is the logo "NINDS BioSEND" in large, bold, black letters, with "NINDS" in blue above "BioSEND". To the right of the logo are the letters "AAA" and two small square icons, one with a plus sign and one with a minus sign. Below the logo is the text "NINDS Biosend GlimpseTBI Kit Request System". The form consists of two main sections: "Study Site" and "Shipping Kit Quantity". The "Study Site" section has a light green background and contains a dropdown menu with a downward arrow and a red asterisk followed by the text "* must provide value". The "Shipping Kit Quantity" section has a light gray background and contains a text input field, a red asterisk followed by the text "* must provide value", and a note in small text: "Contains supplies for shipping two subject visits' worth of samples (ie, 2 cryoboxes)". At the bottom center of the form is a "Submit" button.

Confirm/Update Shipping Information

Select your Study Site from the drop down box to populate the most current information we have for your site. Please confirm or update your site's information as needed.

Study Site <small>* must provide value</small>	Indiana University
Indiana University School of Medicine Carolyn Dunifon Dept. of Medical & Molecular Genetics 351 West 10th Street, TK-318 Indianapolis, IN 46202-3002 (317) 274-5751 cdunifon@iu.edu	
Is the contact name above correct? <small>* must provide value</small>	<input type="radio"/> Yes <input checked="" type="radio"/> No reset
New Contact Name <small>* must provide value</small>	Claire Wegel
Is the shipping address above correct? <small>* must provide value</small>	<input type="radio"/> Yes <input type="radio"/> No reset
Is the e-mail address above correct? <small>* must provide value</small>	<input type="radio"/> Yes <input type="radio"/> No reset
Is the phone number above correct? <small>* must provide value</small>	<input type="radio"/> Yes <input type="radio"/> No reset

Note: The form includes blue arrows pointing to the 'Study Site' dropdown, the 'New Contact Name' input field, and the 'Is the contact name above correct?' radio buttons. A dashed box highlights the 'Study Site' dropdown with the text 'Select your site from the drop-down list'. Another dashed box highlights the 'Is the contact name above correct?' radio buttons with the text 'Verify contact information and update if needed'.

Kit Ordering – Kit Options

BioSEND utilizes a “Kit Number” system that allows for a collection kit to be used for any subject and any time point. Sites record this kit number, along with the assigned subject and time point, on the sample form when samples are shipped to BioSEND.

Kit Type **Please allow two weeks for shipment** * must provide value	<input type="checkbox"/> Blood & CSF Collection Kit <input type="checkbox"/> Extra Supplies Please specify in comments if you need kits before the standard two week shipment time.
Comments	<div style="border: 1px solid #ccc; height: 100px;"></div> <p style="text-align: right;">Expand</p>

Kit Ordering – Kit Contents

Kit Type
****Please allow two weeks for shipment****
** must provide value*

Blood & CSF Collection Kit
 Extra Supplies

Please specify in comments if you need kits before the standard two week shipment time.

Blood & Shipping Kit Quantity
** must provide value*

Comments

Blood & CSF Collection Kit Contents:

Blood Supplies

- 1 - Lavendar EDTA tube, plastic (3ml)
- 1 - Purple EDTA tube, plastic (10ml)
- 1 - Red serum tube, plastic (10ml)
- 3 - Cryovial (2ml) with purple cap
- 3 - Cryovial (2ml) with red cap
- 1 - Cryovial (2ml) with clear cap
- 2 - Disposable pipette, 3ml
- 3 - Resealable tube pouch

CSF supplies

- 5 - Cryovial (2ml) with clear cap

Shipping supplies

- 1 - Cryobox, 25-slot
- 1 - Plastic Biohazard bag with absorbent sheet
- 1 - UPS® Airbill Sleeve
- 1 - Shipping box/Styrofoam container
- 1 - UN3373 label
- 1 - Fragile label
- 1 - Dry ice label (blue, UPS® label)
- 1 - Specimen/Case Labels-- Kit Numbers

Expand

Kit contents of selected kit will appear at the bottom of the page

Kit Ordering – Extra Supplies

This option allows you to order individual kit components. For ex, if you have a kit with blood tubes that have expired, you may order new collection tubes to replace them.

Kit Type **Please allow two weeks for shipment** <small>* must provide value</small>	<input type="checkbox"/> Blood & CSF Collection Kit <input checked="" type="checkbox"/> Extra Supplies <small>Please specify in comments if you need kits before the standard two week shipment time.</small>
Individual Tube Bubble Pouch	<input type="radio"/> 2 <input type="radio"/> 4 reset
25-Slot Cryobox	<input type="radio"/> 2 <input type="radio"/> 4 reset
Red-capped Cryovial (2 ml)	<input type="radio"/> 10 <input type="radio"/> 20 reset
Purple-capped Cryovial (2 ml)	<input type="radio"/> 10 <input type="radio"/> 20 reset
Clear-capped Cryovial (2 ml)	<input type="radio"/> 10 <input type="radio"/> 20 reset
Air waybill envelope	<input type="radio"/> 2 <input type="radio"/> 4 <small>Plastic envelope to affix air waybill to package</small> reset
Lumbar Puncture Trays with Lidocaine, 24g	<input type="radio"/> 2 <input type="radio"/> 4 reset
Lumbar Puncture Trays with Lidocaine, 22g	<input type="radio"/> 2 <input type="radio"/> 4 reset
Medication Transfer Filter Straws (for LP)	<input type="radio"/> 2 <input type="radio"/> 4

Submit Request

- Click “Submit” to send order to BioSEND; staff will confirm receipt of your order
- Please allow **two week** turn-around time for kit shipments
- If urgent request needed, please note date needed by in comments and email BioSEND. We cannot guarantee urgent requests, but will do our best to accommodate.

NINDS BioSEND AAA

NINDS Biosend GlimpseTBI Kit Request System

Study Site * must provide value

University of Washington
Sean Meichle
VAPSHCS 116-MIRECC
Building 101, room 3W25
1660 South Columbian Way
Seattle, WA 98108
206-277-3843
sean.meichle@va.gov

Is the contact name above correct? Yes No * must provide value [reset](#)

Is the shipping address above correct? Yes No * must provide value [reset](#)

Is the e-mail address above correct? Yes No * must provide value [reset](#)

Is the phone number above correct? Yes No * must provide value [reset](#)

Kit Type Blood & CSF Collection Kit Extra Supplies
Please allow two weeks for shipment
* must provide value
Please specify in comments if you need kits before the standard two week shipment time.

Comments [Expand](#)

Submit

Sample Labelling

Labels are provided by BioSEND only for samples shipped back to BioSEND.

- Each collection kit will have a unique “Kit Number” used to track participant samples and provide quality assurance
- This allows a site to use any kit for any subject or time point



Sample Labelling – Kit Labels

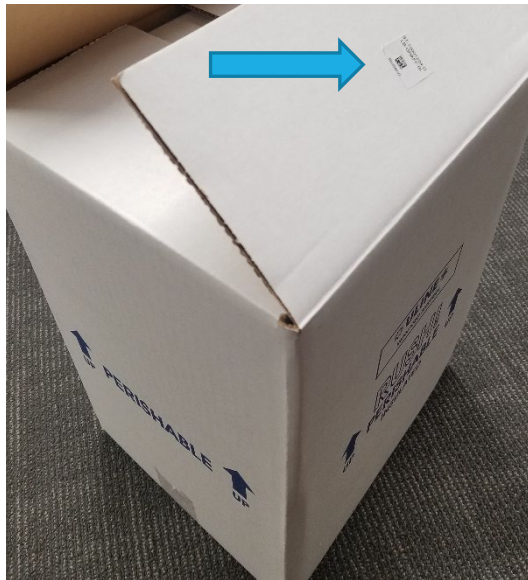


Any kit number can be used for any subject or visit—which is why it is very important to document which kit number was used for which subject and visit

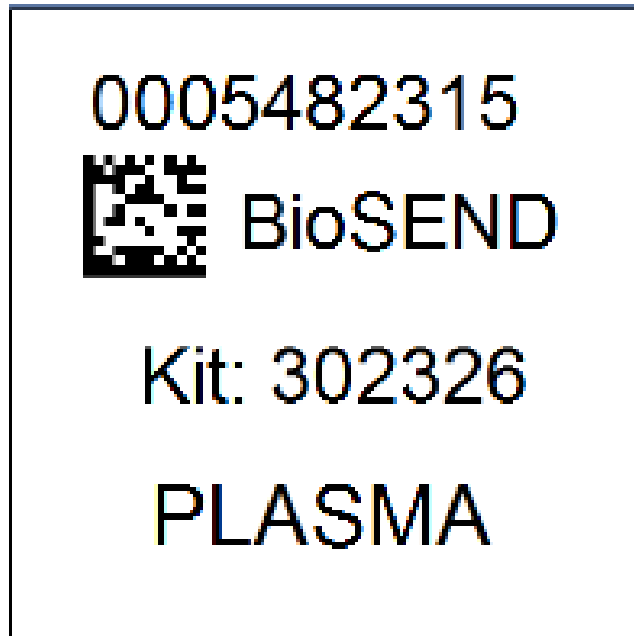
Sample Labelling – Kit Labels

Kit labels are placed:

- On the biohazard bags
- On the lid of frozen shippers



Sample Labelling – Specimen Labels



Unique Barcode



Biorepository Name



Kit Number



Sample Type

- Please check that all samples are properly labelled with correct specimen type
- Label all collection and aliquot tubes prior to collection and processing.

Sample Collection and Processing

Blood Tube Draw Order

1 x 10ml Serum (plastic)
collection tubes



1

1 x 10ml EDTA (plastic)
collection tubes



2

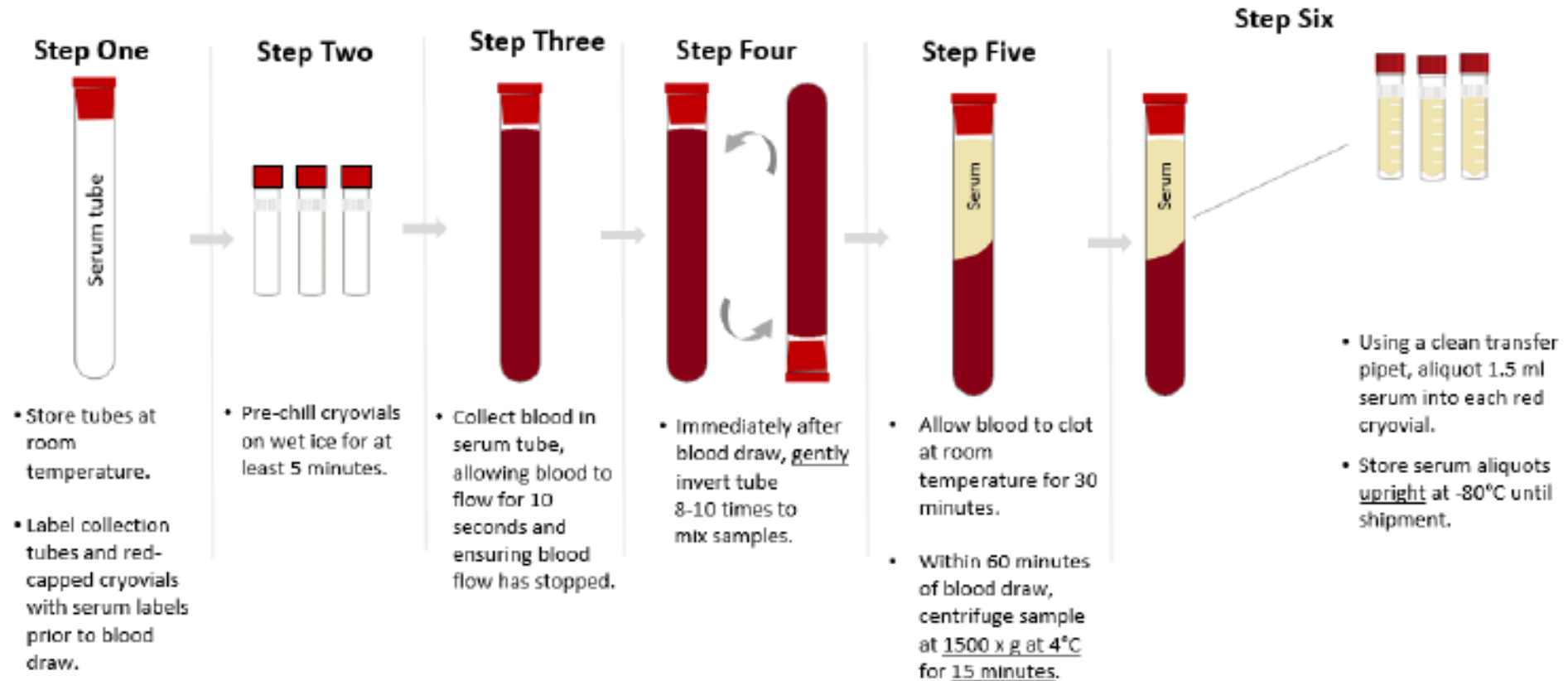
1 x 3ml EDTA
Tube



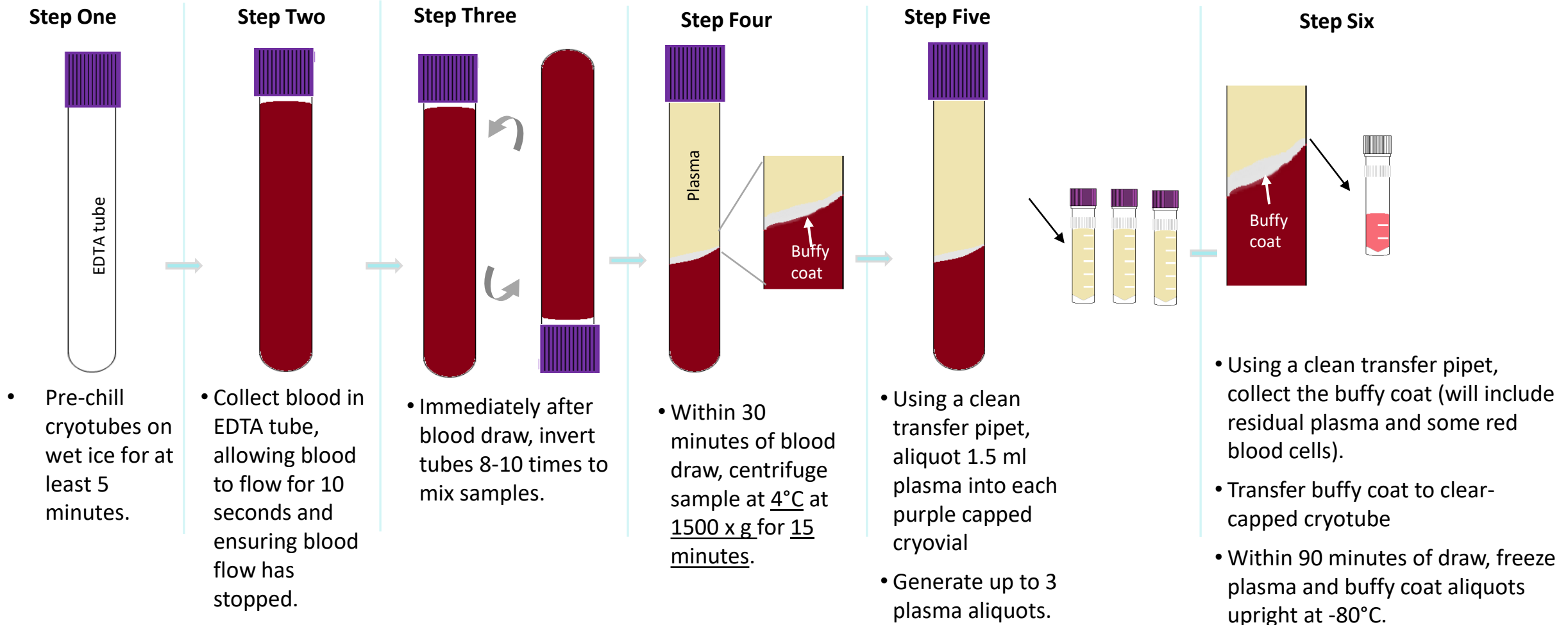
3

Sample Collection and Processing: Serum

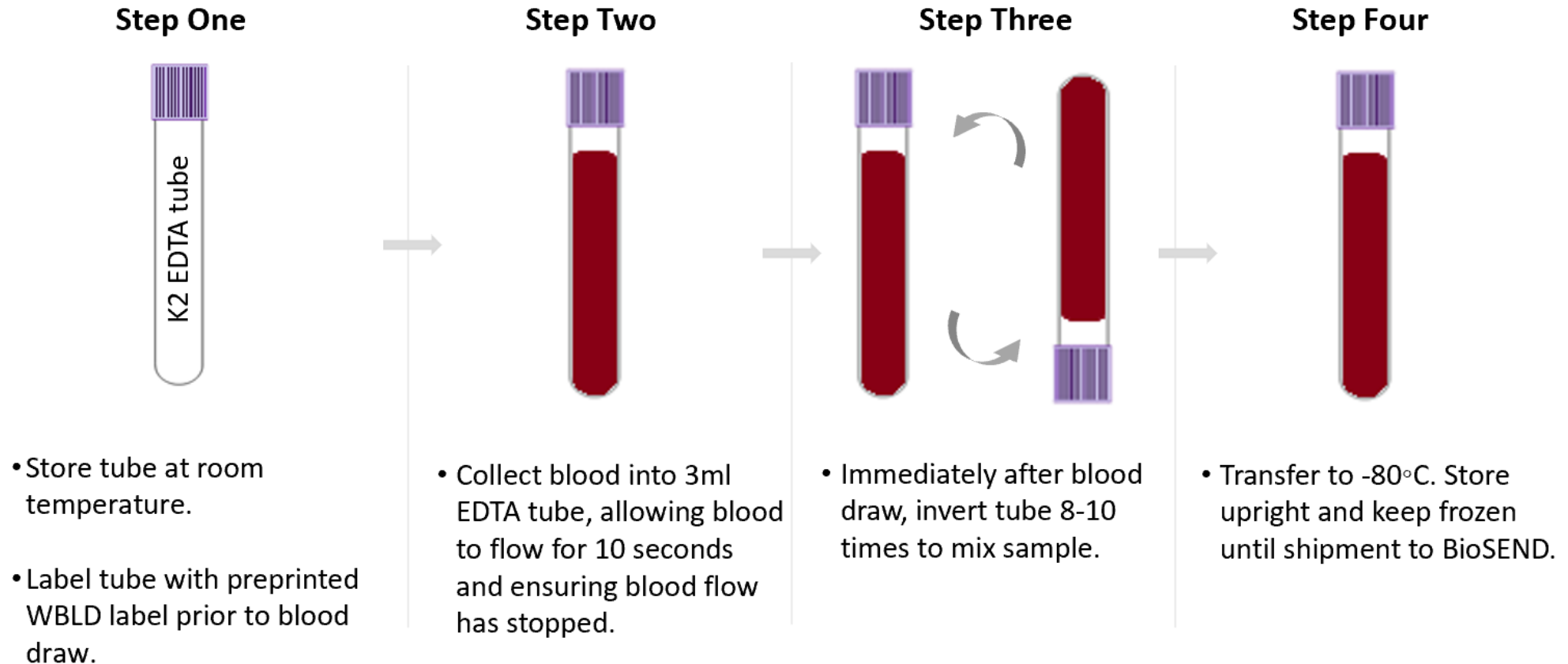
Serum Preparation –10 ml Serum (Red Top) Tube



Sample Collection and Processing: Plasma & Buffy Coat



Sample Collection and Processing: Whole Blood



Blood Collection Troubleshooting

Most common issues with draw:

- Store collection tubes at room temperature
- Check expiration dates and keep extra tubes on hand
- Avoid vigorous mixing of collected sample
- Do not leave tubes uncentrifuged for longer than indicated time

Shipping Samples: Frozen

Packing and Shipping Frozen Samples

- All GlimpseTBI samples ship frozen
- Ship frozen samples on dry ice (shippers use minimum 10lb of dry ice)
- Please notify BioSEND ahead of shipment
 - Email biosend@iu.edu with copy of Sample Form and tracking number
 - OR use Online Sample form on biosend.org
- Frozen samples should be shipped **Monday through Wednesday only**

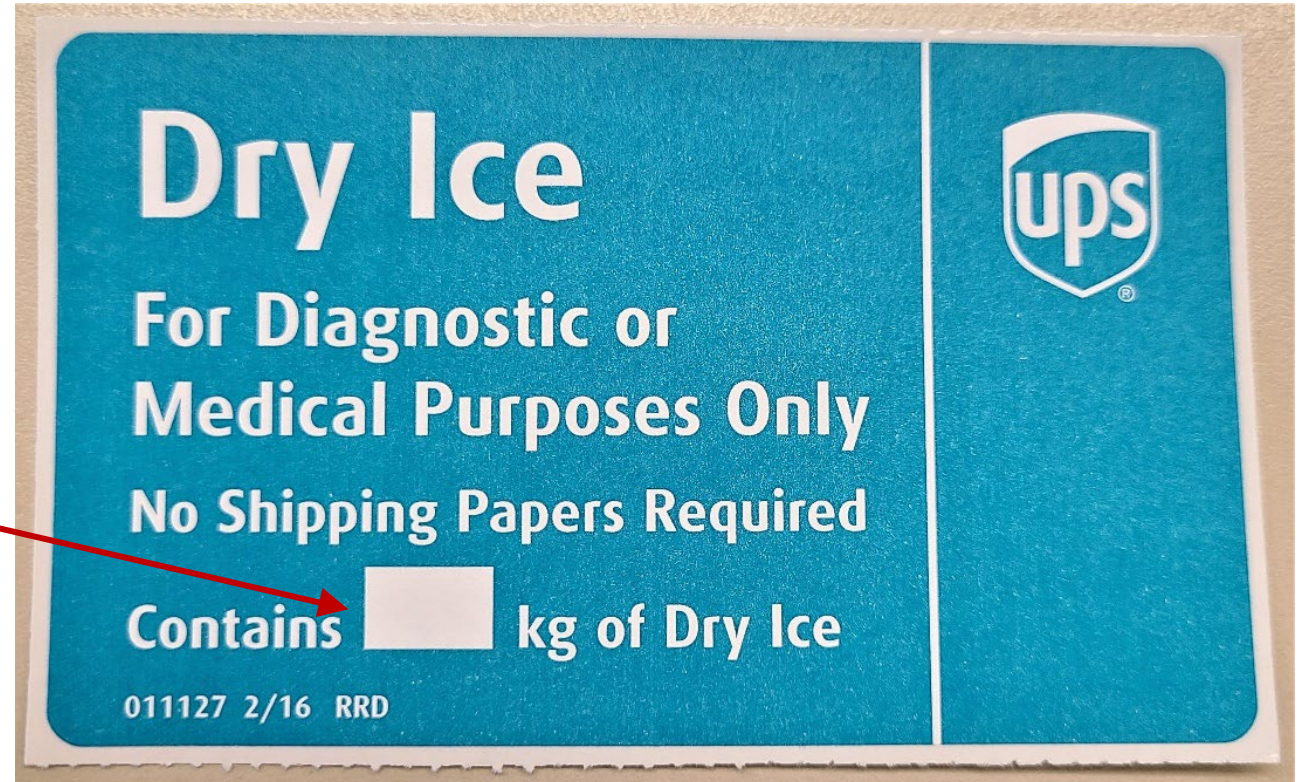


UPS dry ice label should not be covered with other stickers and must be completed correctly, or **courier will reject/return your package!**

Shipping Samples

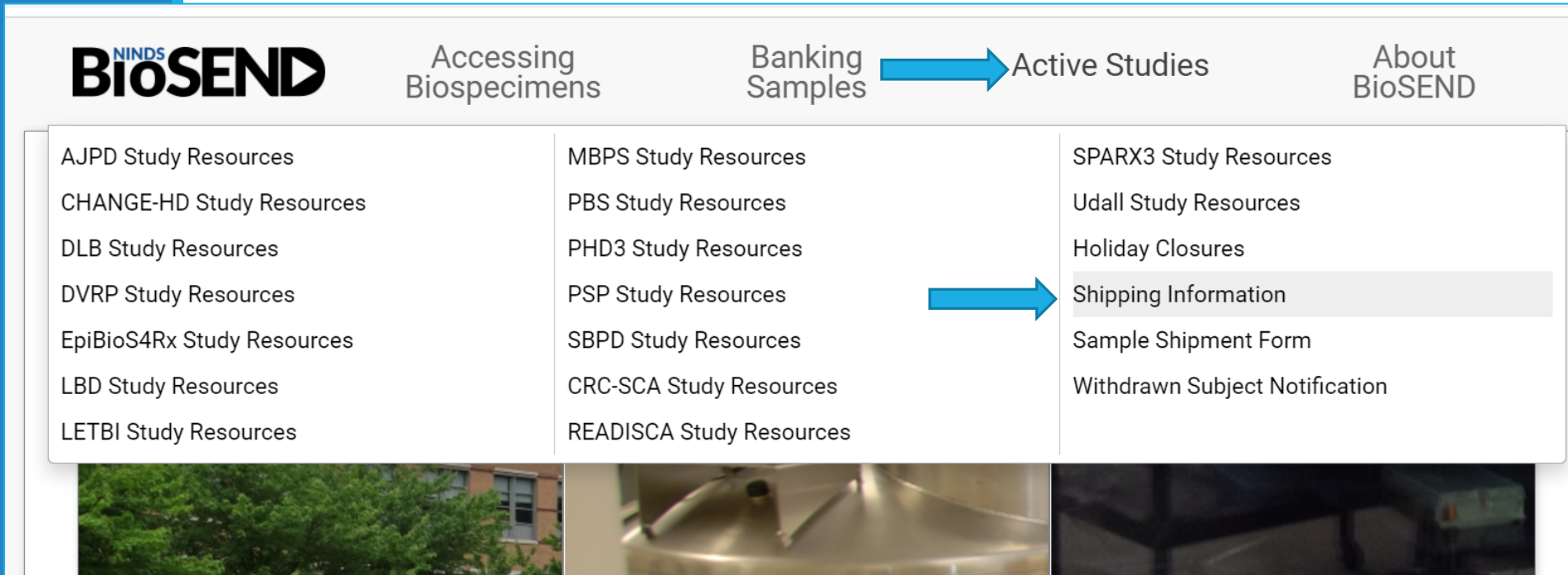
Labeling frozen shippers

Net weight
of dry ice in
kg



Shipping Samples

UPS resources available on BioSEND website on the “Shipping Information” page



The screenshot shows the BioSEND website navigation menu. The logo is 'NINDS BioSEND'. The main navigation items are 'Accessing Biospecimens', 'Banking Samples', 'Active Studies', and 'About BioSEND'. A blue arrow points from 'Banking Samples' to 'Active Studies'. Below 'Active Studies' is a dropdown menu with the following items: 'SPARX3 Study Resources', 'Udall Study Resources', 'Holiday Closures', 'Shipping Information' (highlighted with a blue arrow), 'Sample Shipment Form', and 'Withdrawn Subject Notification'. Below the menu are three small images: a building with green trees, a close-up of a metal container, and a dark interior space.

NINDS BioSEND

Accessing Biospecimens Banking Samples → Active Studies About BioSEND

- AJPD Study Resources
- CHANGE-HD Study Resources
- DLB Study Resources
- DVRP Study Resources
- EpiBioS4Rx Study Resources
- LBD Study Resources
- LETBI Study Resources
- MBPS Study Resources
- PBS Study Resources
- PHD3 Study Resources
- PSP Study Resources
- SBPD Study Resources
- CRC-SCA Study Resources
- READISCA Study Resources
- SPARX3 Study Resources
- Udall Study Resources
- Holiday Closures
- Shipping Information**
- Sample Shipment Form
- Withdrawn Subject Notification

Shipping Information Page

Links on this page to:

1. Generate airwaybills & schedule pickups
2. View printed guide on how to use ShipExec™
3. Request user account and update site address in system
4. View video tutorial for using UPS ShipExec™

UPS Shipping Resources

1 →

To generate air waybills and schedule UPS pickups for shipments to BioSEND, please visit the UPS ShipExec™ Thin Client [website](#).

2 →

For instructions on how to use the UPS ShipExec™ Thin Client website, please refer to the [BioSEND UPS ShipExec™ Thin Client Guide](#)

3 →

To request a new user account for UPS ShipExec™ Thin Client or to request an update to your site's address in the system, please [use this form](#) to submit your request.

Navigating UPS ShipExec™

4 →

The screenshot shows the UPS ShipExec™ Thin Client Home Page. At the top, there is a navigation bar with the ShipExec logo and links for Home, My Account, and My Site. Below the navigation bar, the page title reads "Welcome to the ShipExec™ Thin Client Home Page". The main content area is divided into two columns: "System Notifications" and "Company Notifications". Under "System Notifications", there are two links: "ShipExec Documentation" and "Importing Your Personal Address Book". Under "Company Notifications", there is a message: "No Company Notifications to display". A large video player overlay is centered on the page, showing a play button and a progress bar at the bottom indicating 0:58 / 9:18. The video player also includes volume, full screen, and other standard controls.

Shipping Samples – UPS ShipExec™

If you will be assisting in shipping samples, please request a user account and familiarize yourself with the system well in advance of your first sample shipment

Shipping Samples: Frozen

Please notify BioSEND ahead of shipment

- Email biosend@iu.edu with copy of Sample Form and tracking number
- OR use Online Sample form on biosend.org

Sample Collection and Processing Form

Direct Link:

<https://kits.iu.edu/biosend/GlimpseTBI/sampleForm>

First page captures basic subject and visit information

NINDS
BIOSEND

Returning? AAA + -

Please complete the Specimen Collection and Processing Form, below.

Page 1 of 3

GlimpseTBI Study

Study Site

Email address of staff member completing this form

Note: A copy of the completed sample form and the shipping manifest will be sent to this address.

Clinical ID

Sex (used for DNA quality control)

Visit

Kit Number
eg. 123456

Next Page >>

Save & Return Later

Sample Collection and Processing Form

Pages 2-5 captures processing information

NINDS
BIOSEND

Page 2 of 3

Blood Collection and Processing

Date of venipuncture blood collection Today M-D-Y

Time of venipuncture blood collection Now H:M
Use 24 Hour clock

SERUM (red-top tubes, 10 mL)

Was blood collected and processed for SERUM?

Yes

No

reset

Time of SERUM tube centrifugation Now H:M
Use 24 Hour clock

Duration of SERUM tube centrifugation
minutes

Rate of SERUM tube centrifugation
x g

Temperature of SERUM tube centrifugation
degrees Celsius

Total volume of SERUM collected
mL

Number of SERUM aliquots created
Each aliquot should be 1 mL

Time SERUM aliquots were placed in freezer Now H:M
Use 24 Hour clock.

SERUM storage temperature
degrees Celsius

SERUM notes

Sample Collection and Processing Form

PDF form of responses will be emailed to you. [Print a copy of the Frozen Shipping Manifest and include with shipment.](#)

GlimpseTBI Frozen Shipping Manifest

Page 5

Please verify/update the information below. When you click the "Submit" button below, a PDF copy of the Frozen Shipping Manifest will be emailed to you for Subject [subj_id].

Please print a copy of that document and include it in the shipping container.

Study Site: VA-Puget Sound Health Care System/University of Washington

Clinical ID: _____

Visit: V1
 V2

Kit Number: _____

Date of blood collection: _____

Date of CSF collection: _____

SERUM

Number of SERUM aliquots shipped: _____

PLASMA EDTA

Number of PLASMA EDTA aliquots shipped: _____

Number of BUFFY COAT aliquots shipped: _____

WHOLE BLOOD EDTA

Number of WHOLE BLOOD tubes shipped: _____

CSF

Number of CSF aliquots shipped: _____

Non-Conformance

Most common non-conformance issues:

- Samples shipped for weekend/holiday delivery
- Sample form incomplete/inaccurate
- Unlabeled or mislabeled tube(s)
- Sample hemolysis



Non-Conformance

- BioSEND will notify sites directly of any issues upon receipt. We appreciate your prompt response in reconciling any issues.
- ***If you are experiencing issues, please reach out to us for help! It is much easier to prevent an issue before sample collection & shipment than trying to fix it after the fact***

Shipping Samples: Closures

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

*Please also consider weather when shipping. UPS will post service updates on their webpage. Please reach out to BioSEND if you are unsure if it is safe to ship.

Contacts

Indiana University

General Questions/Shipment Notifications:

biosend@iu.edu