

# SPECIMEN COLLECTION FORM for EVEN Follow-up Visits 2, 4, 6, 8, ... (L21)

## CKiD Chronic Kidney Disease in Children Cohort Study

### SECTION A: GENERAL INFORMATION

A1. PARTICIPANT ID: AFFIX ID LABEL OR ENTER NUMBER IF ID LABEL IS NOT AVAILABLE

|\_| - |\_|\_| - |\_|\_|\_|

A2. CKiD VISIT #: \_\_\_\_\_

A3. FORM VERSION: 0 8 / 0 1 / 2 1

A4. SPECIMEN COLLECTION DATE: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
M M D D Y Y Y Y

A5. FORM COMPLETED BY (INITIALS): \_\_\_\_\_

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The following samples should be collected.

<u>Samples:</u>	<u>Shipped to</u>	<u>Shipped:</u>
Serum	CBL	IMMEDIATELY
Serum	CBL	Batched (Ship in Jan, Apr, Jul or Oct)
Urine	CBL	IMMEDIATELY
Iohexol Blood*	CBL	IMMEDIATELY

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\* COLLECT IOHEXOL BLOOD DRAW: Only if Cohort 3 participants who consent to iohexol protocol or Cohorts 1 & 2 participants had previous iGFR>90

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If consent is obtained for biological samples, collect the following:

<u>Samples:</u>	<u>Shipped to:</u>	<u>Shipped:</u>
Serum (Biological)	NIDDK Biorepository	Batched (Ship in Jan, Apr, Jul or Oct)
Plasma (Biological)	NIDDK Biorepository	Batched (Ship in Jan, Apr, Jul or Oct)
Urine (Biological)	NIDDK Biorepository	Batched (Ship in Jan, Apr, Jul or Oct)

**BATCHED SAMPLES SHOULD BE SHIPPED QUARTERLY (Jan, Apr, July or Oct)  
OR MORE OFTEN IF DESIRED BY THE SITE COORDINATOR!**

**Samples should NOT be stored for more than six (6) months.  
For specific questions, contact your CCC prior to shipment.**





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## SECTION C: Visit 2 BLOOD DRAW

For Initial Blood Draw with Syringe, Vacutainer OR Butterfly Method: Select the type of consent obtained (options 1 through 3) that pertains to the CKiD Participant:

- 1** If participant consented to **BIOLOGICAL** samples:  
Collect **14-15 mL** if participant is **< 30 kg** OR **20-21 mL** if participant is **≥ 30 kg**.

If **< 30 kg**, immediately transfer (**using 18 gauge needle**) or draw:

- 8.5 mL into (1) Tiger-Top SST for CBL & NIDDK Biorepository
- 3 mL into (1) PST for NIDDK Biorepository
- 1 mL in lavender-top tube for local CBC  
(*tube not provided in CBL kit*)
- 1.5 mL in appropriate tube (*not provided*) for local Renal Panel
- **1 mL of additional blood in SST for CBL (if initial sample is GROSSLY HEMOLYZED)**

If **≥ 30 kg**, immediately transfer (**using 18 gauge needle**) or draw:

- 12.5 mL into (2) Tiger-Top SSTs for CBL & NIDDK Biorepository
- 5 mL into (2) PST for NIDDK Biorepository
- 1 mL in lavender-top tube for local CBC  
(*tube not provided in CBL kit*)
- 1.5 mL in appropriate tube (*not provided*) for local Renal Panel
- **1 mL of additional blood in SST for CBL (if initial sample is GROSSLY HEMOLYZED)**

- 2** If participant did **NOT** consent to **BIOLOGICAL** samples:  
Collect **5-6 mL** from all participants (regardless of weight) as specified below.

Immediately transfer (using 18 gauge needle) or draw:

- 2.5 mL into (1) Tiger-Top SST for CBL
- 1 mL in lavender-top tube for local CBC (*tube not provided in CBL kit*)
- 1.5 mL in appropriate tube (*not provided*) for local Renal Panel
- **1 mL of additional blood in SST for CBL (if initial sample is GROSSLY HEMOLYZED)**

- 3** For Participant Completing Iohexol Study Visit  
Only Cohort 3 participants who consent to iohexol protocol or Cohorts 1 & 2 participants with previous iGFR>90

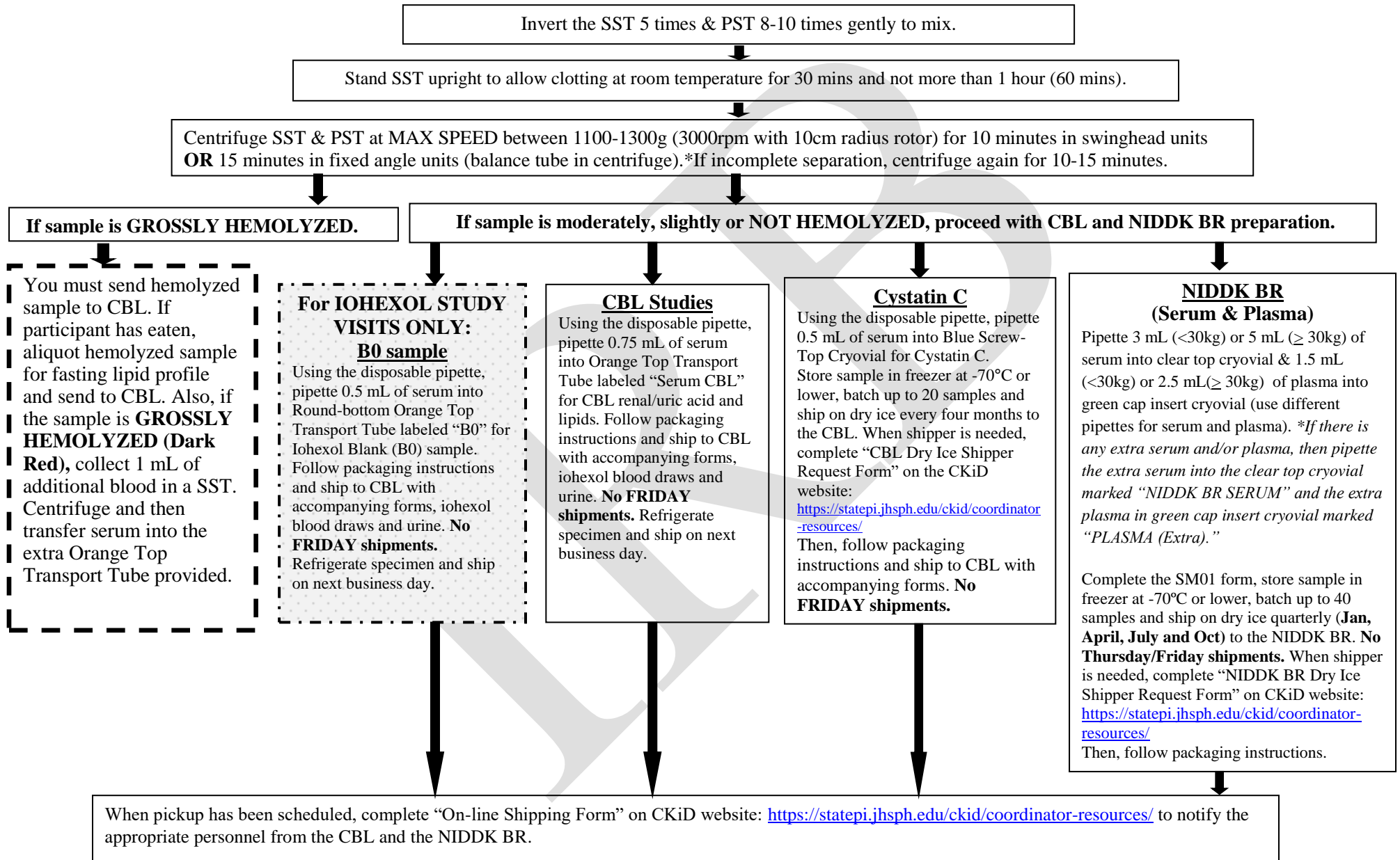
For IOHEXOL study visits:

- **1 mL of additional blood into Tiger Top SST for CBL Iohexol Blank (B0) blood sample**

Iohexol is infused at the time of initial blood draw.  
Refer to page 10 for **Instructions for Iohexol Infusion and GFR Blood Draws.**

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## SECTION C: Visit 2 BLOOD DRAW PROCESSING



## SPECIMEN COLLECTION FORM for EVEN Follow-up Visits 2, 4, 6, 8, ... (L21)

C1. ACTUAL TIME OF BLOOD DRAW \_\_\_\_ : \_\_\_\_ : \_\_\_\_ 1 = AM 2 = PM

**PROMPT: IF SUSPECTED BLOOD DRAW ADVERSE EVENT (i.e., infection), complete ADVERSE EVENT (ADVR) Form**

<b>Reasons Code List*:</b>	1= Not required	4 = Red Blood Cell Contamination	7 = Exceed maximum allowable volume
	2 = Difficult Blood Draw	5 = Inadvertently Destroyed	
	3 = Participant Refused	6 = Oversight	

Sample Type (Required Volume in Top Color Tube Type):	(a) Sample Obtained: <u>Yes</u> <u>No</u>	(b) If No, specify reason *SEE CODE LIST ABOVE	(c) Additional Requirements:
C2. Renal/Uric Acid Chemistries (2.0 mL in Tiger Top SST)	1      2 (skip to c→)	____ (skip to C3)	<b>Indicate the appearance of the serum after centrifuging.</b> Grossly (Dark Red).....1 Moderately (Red/Light Red).....2 Slightly (Pink).....3 Not Hemolyzed (Yellow).....4
C3. Cystatin C (1.0 mL in Tiger Top SST)	1      2 (skip to c→)	____ (skip to C4a)	Date Frozen: ____/____/____ M M D D Y Y Y Y
C4a. Local CBC (1.0 mL in Lavender Top tube)	1      2 (skip to C4b)	____ (skip to C4b)	<b>N/A</b>
C4b. Local Renal Panel (1.5 mL in Local SST)	1      2 (skip to C5)	____ (skip to C5)	<b>N/A</b>
C5. Serum for Fasting Lipid Panel (0.5 mL in Tiger Top SST)	1      2 (skip to c→)	____ (skip to C6)	<b>Did the participant fast after midnight?</b> Yes.....1 No.....2*

\*If the participant did not fast, the Nephron Lipid Report will indicate that the participant did not fast.

Sites can obtain results for lab values that have been identified as "KEY VARIABLES". To obtain results, go the CKiD Nephron Website: <https://statepiaps8.jhsph.edu/nephron/groups/aspproc/>, click on "Report Menu" and choose the appropriate lab report (i.e., Selected Renal Panel Lab Variables Report.)

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C6. Did the participant consent to have biological samples (i.e., serum, plasma and urine samples) stored at the NIDDK Biorepository?

Yes..... 1

No..... 2 (Skip to E2)

<b>Reasons Code List*</b>	1 = Not required	4 = Red Blood Cell Contamination	7 = Exceed maximum allowable volume
	2 = Difficult Blood Draw	5 = Inadvertently Destroyed	
	3 = Participant Refused	6 = Oversight	

Sample Type (Required Volume in Top Color Tube Type):	(a) Sample Obtained:	(b) If No, specify reason *SEE CODE LIST ABOVE	(c) Additional Requirements:
	<u>Yes</u> <u>No</u>		
C7. Serum for NIDDK Biorepository (**6.0 mL or **10.0 mL of blood in Tiger Top SST)	1 (skip to c→)      2	_____ (skip to C8)	Date Frozen: _____/_____/_____ M M D D Y Y Y Y
C8. Plasma for NIDDK Biorepository (***3.0 mL of blood in one Green Top or ***5.0 mL in two Green Top PSTs)	1 (skip to c→)      2	_____ (skip to D1)	Date Frozen: _____/_____/_____ M M D D Y Y Y Y

\*\* Collect 6.0 mL of whole blood for participants < 30 kg and 10.0 mL for participants ≥ 30 kg

\*\*\* Collect 3.0 mL of whole blood for participants < 30 kg and 5.0 mL for participants ≥ 30 kg

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## SECTION D: URINE COLLECTION AND PROCESSING FOR REPOSITORY

Collect FRESH urine into an initial urine collection cup or hat (provided by the site).

Pour 15-60 mL (preferably 60 mL) of FRESH urine into 90 mL urine collection cup with 4 protease inhibitor tablets. Do not fill the urine past the 60 mL mark on the collection cup. One protease inhibitor tablet should be used for 10-15 mL of urine (see Table A). For example if 30 mL of urine is collected, ONLY 2 protease inhibitor tablets are needed. (Like all unused supplies, **unused protease inhibitor tablets should be returned to the CBL.**)

Urine Volume	# of Protease Inhibitor Tablets
10 – 15 mL	1
16 – 30 mL	2
31 – 45 mL	3
46 – 60 mL	4

Invert the urine cup gently 5 – 10 times.

The PROTEASE INHIBITOR TABLET(S) MUST BE **COMPLETELY DISSOLVED** in the urine.

Once the protease inhibitor tablet(s) are completely dissolved, pour urine into up to six (6) 10 mL urine centrifuge tubes. (For each tube: remove yellow top cap, pour urine into tube and **SCREW** cap back onto tube.) Place no more than 10 mL in each tube.

-- OR --

**Sites may also substitute with tubes normally used to centrifuge urine at site.**

Centrifuge urine tube(s) at MAX SPEED between 1100-1300g (3000rpm with 10cm radius rotor) for 10 mins (swinghead units) – **OR** – 15 mins (fixed angle units).

Decant (pour off) the supernates (liquid reaction) into up to seven (7) 10 mL urine cryovials. Pour no more than 9 mL of urine into each 10 mL cryovial to allow for expansion.

Check that all information is correct on the urine cryovials, complete the SM01 form and promptly freeze and store sample(s) at -70°C or lower. Batch samples and ship on dry ice at least quarterly (include maximum of 36 cryovials per shipper). When shipper(s) is needed, complete “NIDDK Shipper Request Form” on CKiD website: <https://statepi.jhsph.edu/ckid/coordinator-resources/> Then, follow packaging instructions. **No Thursday/Friday shipments.**

When pickup has been scheduled, complete “Online Shipping Form” on CKiD website to notify the NIDDK BR and KIDMAC that sample(s) have been shipped to NIDDK BR.

**Reasons Code List\*:**    1= Not required    2 = Difficult Urine Collection    3 = Participant Refused    4 = Collection Contamination    5 = Inadvertently Destroyed    6 = Oversight    7 = Insufficient volume

Sample Type (Required Volume in Top Color Tube Type):	(a) Sample Obtained:		(b) If No, specify reason *SEE CODE LIST ABOVE	(c) Additional Requirements:
	Yes	No		
D1. Urine for NIDDK Biorepository (15.0 - 60.0 mL of urine in specimen container and transferred into collection cup with protease inhibitors)	1	2	— — (skip to E2)	i. Was supernate decanted into urine transport cryovials? Yes.....1 No.....2  ii. Date Frozen: ___ ___ / ___ ___ / ___ ___ ___ ___ <div style="text-align: center; font-size: small;">M   M   D   D   Y   Y   Y   Y</div>



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## SECTION E: OPTIONAL TESTS LOCAL LAB TEST (IF CLINICALLY INDICATED)

Check with the PI at your clinical site to determine whether or not it is **CLINICALLY INDICATED** to obtain urine for local lab. These are instances when the PI needs results immediately and/or the participant needs additional local labs performed (i.e., local Urine Creatinine and Urine Protein).

E2. Was a urine protein to creatinine ratio assay performed at the clinical site's local laboratory?

Yes..... 1 → **Complete Local Urine Assay Results Form L06, ONLY if local labs are CLINICALLY INDICATED**  
No..... 2

### IOHEXOL PROTOCOL

E3. Is the participant completing iohexol study visit? Yes, consent obtained..... 1  
No..... 2 → (END FORM)

### **ONLY COMPLETE SECTIONS F & G IF PARTICIPANT IS COMPLETING IOHEXOL STUDY VISIT.**

**Only Cohort 3 participants who consent to iohexol protocol or Cohorts 1 & 2 participants with previous iGFR>90 should complete iohexol protocol. If you have additional questions, contact CCC.**

**For an iohexol study visit, additional blood (including blood for the iohexol "B0" Blank sample) should be collected for iohexol-Based GFR.**

### SECTION F: INFUSION SYRINGE WEIGHT

F1. **SCALE MUST FIRST BE ZEROED BEFORE WEIGHING. REMOVE ALUMINUM FOIL PRIOR TO WEIGHING THE SYRINGE. THE SAME SCALE MUST BE USED TO WEIGH THE SYRINGE PRE AND POST IOHEXOL INFUSION.**

- a. Syringe Weight **Pre-iohexol** Infusion: \_\_\_\_ . \_\_\_\_ (g)
- b. Syringe Weight **Post-iohexol** Infusion: \_\_\_\_ . \_\_\_\_ (g) (Post-Infusion Weight should be **at least 6.0g** less than Pre-Infusion Weight. If Post-Infusion Weight is not at least 6g less, please confirm.)

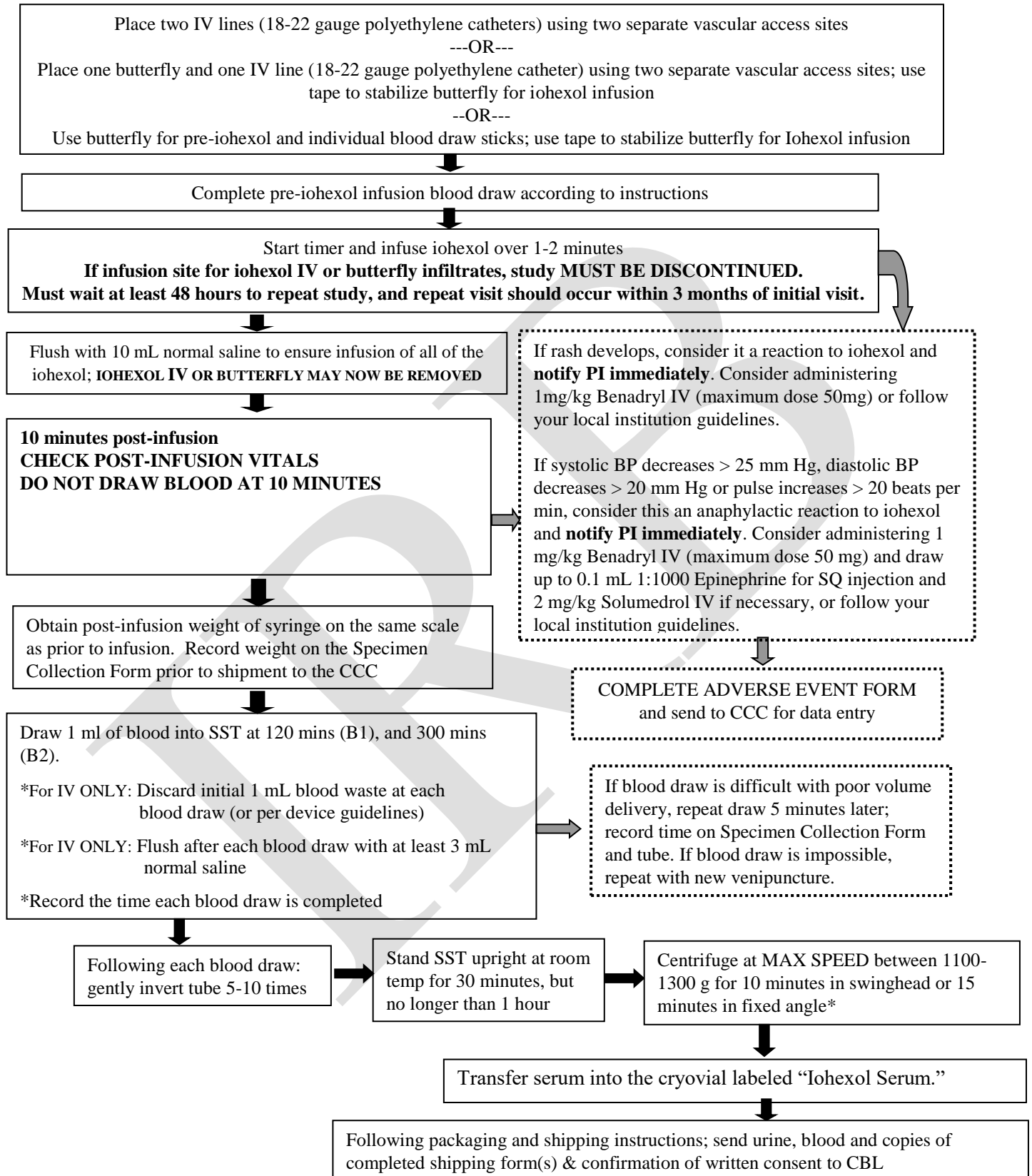
**PRE AND POST SYRINGE WEIGHT MUST BE OBTAINED IN ORDER TO CALCULATE PARTICIPANT'S GFR.**

### SECTION G: IOHEXOL – Refer to Instructions for iohexol Infusion and GFR Blood Draws Flow Chart on Page 10

- **BEFORE INFUSING 5 mL OF IOHEXOL, SET TIMER = 0. SIMULTANEOUSLY START TIMER AND BEGIN IOHEXOL INFUSION**
- **COMPLETE INFUSION BETWEEN 1 TO 2 MINS**
- **LEAVE TIMER RUNNING THROUGHOUT IOHEXOL INFUSION AND SUBSEQUENT BLOOD DRAWS**

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## Instructions for Iohexol Infusion and GFR Blood Draws



**Physician should be immediately available (in person or by phone) during Iohexol Infusion  
Encourage fluids throughout the visit.**

\*1100-1300 g = 3000 rpm with 10 cm radius rotor

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G1. IOHEXOL INFUSION

a. INFUSION START TIME: \_\_\_\_\_ : \_\_\_\_\_ 1 = AM 2 = PM

- DO NOT DRAW BLOOD FROM THE IV SITE WHERE IOHEXOL WAS INFUSED. ANOTHER IV SITE MUST BE USED.
- WASTE 1 mL OF BLOOD IF DRAWING FROM A SALINE/HEPARIN LOCK (OR PER DEVICE GUIDELINES).
- COLLECT 1 mL OF BLOOD FOR EACH IOHEXOL BLOOD DRAW IN THE PROVIDED SST.
- RECORDING THE EXACT NUMBER OF MINUTES ON THE TIMER IS MORE IMPORTANT THAN DRAWING THE BLOOD EXACTLY AT 120 & 300 MINUTES AFTER IOHEXOL INFUSION. FOR EXAMPLE, IF BLOOD IS DRAWN AT 133 MINS INSTEAD OF 120 MINS, DOCUMENT BLOOD DRAWN @ 133 MINS.
- TIME SHOULD BE RECORDED IMMEDIATELY AFTER EACH BLOOD SAMPLE IS OBTAINED (i.e., B1, B2).

**POST VITALS SHOULD BE TAKEN 10 MINUTES AFTER INFUSION  
USING LOCAL BLOOD PRESSURE MEASUREMENT (i.e. DINAMAP)**

- If rash develops after Iohexol Infusion, consider it a reaction to Iohexol and notify PI immediately. Consider administration of 1 mg/kg Benadryl IV (maximum dose: 50 mg Benadryl IV) or follow your local institution guidelines.
- In the rare event that systolic BP decreases more than 25 mm Hg, diastolic BP decreases more than 20 mmHg, or pulse increases more than 20 beats per min, notify PI immediately to evaluate reaction and complete the Adverse Event (ADVR) Form. Consider the possibility of an anaphylactic reaction to Iohexol. Consider administration of 1 mg/kg Benadryl IV (maximum dose: 50 mg Benadryl IV). Draw up to 0.1 mL 1:1000 Epinephrine for SQ injection and 2 mg/kg Solumedrol IV for administration as ordered by physician, or follow your local institution guidelines.

(i) Post Vitals:		
G2a.	Post- infusion blood pressure:	_____ / _____
b.	Post-infusion temperature:	_____ . _____ 1 = °C Typical range: <b>36.1 – 38.3</b> 2 = °F Typical range: <b>94.5 – 100.6</b>
c.	Post-infusion number of heart beats per minute:	_____
d.	Post-infusion respirations per minute:	___ ___

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**INVERT TUBE 5-10 TIMES AFTER EACH BLOOD DRAW**  
**LET SST TUBE STAND 30 MINUTES (BUT NO LONGER THAN 1 HOUR)**  
**CENTRIFUGE AT MAX SPEED BETWEEN 1100-1300g (3000rpm with 10cm radius rotor) for 10 MINUTES IN SWING HEAD**  
**OR 15 MINUTES IN FIXED ANGLE (BALANCE TUBES IN CENTRIFUGE)**

	ALL TIMES should be documented from the initial infusion time	(i) ACTUAL HOURS/ MINUTES on TIMER	(ii) ONLY if Timer malfunctions, record Clock Time using the same clock used for G1a	(iii) Difficult Blood Draw:		(iv) Blood Drawn via Venipuncture		(v) Blood Volume Collected (1 mL):	(vi) Centrifuged at Clinical Site:	
				Yes	No	Yes	No		Yes	No
G3a.	<b>B1 2 hrs (120 min):</b>	___ hr ___ mins	___ : ___ 1 = AM 2 = PM	1 (Skip to b)	2	1	2	___ . ___ mL	1 (Skip to G4a)	2 (Skip to G4a)
b.	<b>B1 2<sup>nd</sup> attempt:</b>	___ hr ___ mins	___ : ___ 1 = AM 2 = PM	1	2	1	2	___ . ___ mL	1	2
G4a.	<b>B2 5 hrs (300 min):</b>	___ hr ___ mins	___ : ___ 1 = AM 2 = PM	1 (Skip to b)	2	1	2	___ . ___ mL	1 (END)	2 (END)
b.	<b>B2 2<sup>nd</sup> attempt:</b>	___ hr ___ mins	___ : ___ 1 = AM 2 = PM	1	2	1	2	___ . ___ mL	1	2