Welcome to eSessions

This session contains audio.
Review the information on each slide before continuing.
OPERATIONAL PRINCIPLES OF SPECTRA AUTOPBSC MONONUCLEAR CELL COLLECTION PROCEDURE

COBE® SPECTRA APHERESIS SYSTEM
Getting Around

Click on these **TABS** to change the view of the left sidebar:

- **OUTLINE** shows links to each slide.
- **THUMBNAILS** shows a small image of each slide.
- **SEARCH** allows you to search the eSession by keyword(s).

- This button toggles between **PLAY** and **PAUSE**. Click the **PLAY** button to continue.
- Go to **PREVIOUS** screen.
- **Go to NEXT** screen.
- Click this icon to toggle between **FULL SCREEN** and **STANDARD** view.
Presentation Overview

- Presentation objectives
- Indications for Spectra AutoPBSC procedures
- Operational overview
- Data entry
- Three-phase collection method
- Function of the CCM
- Assisted mode
- Optimization checklist
Presentation Objectives

Participants will be able to:

- State the indications for performing an AutoPBSC procedure.
- Describe the three phases of collection.
- Describe how the operator uses Assisted mode.
- Explain the effect of entered data on the calculation of Harvest phase frequency.
- List the three functions of the CCM during an AutoPBSC procedure.
- Name three factors to consider when optimizing procedures.
Indications

Collection of peripheral blood stem cells, monocytes, lymphocytes, and dendritic cells.
Operational Overview
Spectra AutoPBSC Disposable Tubing Set

- Pre-attached Plasma Bag
- One Collect Bag
- Pre-attached Needle on Access Line
- RBC Reservoir
- CCM Cuvette
- Thin Collect Line
- Red 4-Lumen Connector

Sterile Barrier Filters
Customizing Configurable Run Parameters

- Endpoints = Time, inlet volume, or \( \{ \} \times \text{Total blood volume (TBV)} \)
- Inlet:AC ratio = 9:1 to 15:1
- AC infusion rate = 0.8 to 1.1 mL/min/L TBV
- Harvest volume = 1 to 5 mL
- Chase volume = 3 to 20 mL
Data Entry

During the data entry step, the following donor/patient information is entered into the COBE Spectra system:

- Sex
- Height
- Weight
- Hematocrit
- WBC concentration
- MNC percentage (lymphocytes, monocytes)

COBE Spectra system calculates

- TBV

COBE Spectra system calculates the MNC count

MNC count = WBC conc. x MNC%)

Note: MNC% can be determined by a manual or automatic method.
Concurrent Plasma Collection

The Spectra AutoPBSC program allows concurrent collection of plasma with the collection of mononuclear cells and peripheral blood stem cells.

Enter Concurrent Plasma Volume: {0} ml
Run Results Screen

The COBE Spectra system uses the patient/donor data entered to calculate the following information:

Time =___, Inlet Volume=____, Flow =____,
Plasma =____, Collect=_____ OK(YES/NO)?

To approve, press YES.
To change, press NO.
The following screen appears after pressing NO:

1=Run Time, 2=Inlet Volume, 3=Inlet Flow,
4=Plasma, 5=Collect, 6=Harvest
## Establishing the Interface

<table>
<thead>
<tr>
<th>AC</th>
<th>INLET</th>
<th>PLASMA</th>
<th>COLLECT REPLACED</th>
<th>INLET/AC RATIO</th>
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Establishing Interface at 45.0 ml/min

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Establishing Interface at 65.0 ml/min
Spectra AutoPBSC Procedure

The maximum validated inlet flow rate is 85 mL/min.
Three-Phase Collection Method

- Accumulation phase
- Harvest phase
- Chase phase
Accumulation Phase

Diagram showing the accumulation phase with labels for Plasma, PBSC, and RBC.
Accumulation Phase (cont)

Goal of the phase:
- Allow a given number of MNCs to accumulate

Length of the phase depends on:
- MNC count
- Inlet flow rate
Accumulation Phase (cont)

The following screen appears once the interface is established:

*XXXX: Inlet volume processed before next Harvest occurs

Press **CLEAR** to display the following run screen:

---
Harvest Phase

Plasma

PBSC

RBC
Harvest Volume

This graphic is a conceptual representation of the default settings.

Default = 3 mL
Configuration range = 1.0 to 5.0 mL

Volume of cells collected per Harvest phase
Cross-cellular contamination

Harvest volume
Harvest Phase (cont)

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Harvesting…..

The steps of the Harvest phase are:
1. Reservoir enrichment
2. Recirculation
3. Harvest
Chase Phase
Chase Volume

- **Chase volume**: 3 mL
- **Harvest volume**: 3 mL
- **Total collect volume per Harvest phase**: 23 mL
- **Chase volume**: 3 mL
- **Harvest volume**: 3 mL
- **Total collect volume per Harvest phase**: 23 mL
- **Chase volume**: 3 mL
- **Harvest volume**: 3 mL
- **Total collect volume per Harvest phase**: 23 mL

---

Default Configuration range

- **= 3 mL**
- **= 10 mL**
- **= 20 mL**

Total collect volume

- **Chase volume**
- **Concentration**

---
Chase Phase (cont)

The steps of the Chase phase are:

1. Reposition interface
2. Chase
Function of the Collect Concentration Monitor (CCM)

The CCM detects:

- A spillover that occurs during the Accumulation phase
- If cells are exiting the centrifuge during a Harvest phase; if cells are detected, the CCM triggers the COBE Spectra system to open the collect valve
- If cells are not exiting the centrifuge at the point when a Harvest phase should have occurred
- If cells are exiting the centrifuge too soon during a Harvest phase
CCM Alarm Messages

The following alarm messages either initiate or allow the operator to choose Assisted mode:

1. **CCM CALIBRATION FAILURE.**
   Press 1 to retry, or CLEAR to disable.

2. **CCM not operational – this run only.**

3. **SPILLOVER PERSISTS.**
   Entering Assisted Mode. CLEAR

4. **Cells not detected, not harvesting.**
   Enter Assisted Mode (Y/N)?
Assisted Mode

During Assisted mode:

- The COBE Spectra system is still in Automatic mode.
- “PBSC” replaces “AuPBSC” in the right-hand corner of the display screen.
- The operator performs the function of the CCM by monitoring the collect line for cells exiting the centrifuge and prompts the system to open the collect valve.
Assisted Mode (cont)

The operator can choose to use Assisted Mode if the CCM malfunctions or to optimize the collection in unique circumstances:

- Very high platelet count
- Late collect valve opening
Assisted Mode (cont)

Assisted Mode: Monitor Interface
Press 1 to Open Valve or 2 to Skip.

The operator must monitor the Harvest phase and tell the COBE Spectra system to open the collect valve by pressing 1.

**WARNING:** Do not immediately press 1. It is very important to wait until the cells start to come up the collect line and are observed at the CCM.
Assisted Mode (cont)

To exit Assisted mode:

- Press **MENU ON/OFF**.
- Press 3 for CCM.
- The following screen appears:

<table>
<thead>
<tr>
<th>Harvest/Spillover detector:</th>
<th>1=Enable</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>2=Disable*</td>
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</table>

- Press 1.
To ensure optimal collections using the Spectra AutoPBSC program:

- Enter accurate patient/donor data.
  Choose the appropriate:
  - Harvest volume
  - Chase volume
  - Number of Harvest phases
- Choose concurrent plasma collection instead of increasing the Chase volume or collect volume
Optimization Checklist (cont)

- Process at least 2 times the TBV of the patient/donor
- Consider large volume leukapheresis
- Provide adequate anticoagulation
- Avoid access pressure low alarms