

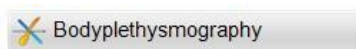
## Body Plethysmography: sRAW (rapid panting) with FRCpleth\* Workflow Quick Guide

### Vyntus™ BODY

\*Note: **ATTENTION** to 'Program Settings' is required for this workflow; see page 2.

**Workflow summary:** A) Airway resistance (sRAW) with rapid panting, then B) separate FRCpleth maneuvers

1. Select measurement program "Bodyplethysmography" (from Home Page or a measurement program),



...the program "Body Separated" is shown



**Preparation:** Verbally explain measurement to patient and/or give demonstration

2. **Door:** a) With patient in cabin, click <F7> to activate the door magnets, and  
b) close the body box door by pressing the door gently to the magnets  
(Mic/speaker: turn on manually with <F6>, or activates automatically with <F1>/<F2>.)
3. Connect patient to breathing circuit with MicroGard™ filter, nose clip, and support the cheeks  
(consider flange-type mouthpiece to aid mouth seal)



### A. Specific Resistance (sRAW) Measurements

To collect 5 sRaw values in trials 1-5 and the 'FRC used in resistance' in trial 1

4. **Stable FRC and sRAW:** Click <F1> "Start" as patient begins steady tidal breathing

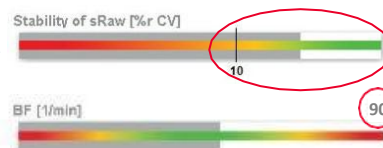


- a) Wait for stable FRC indicated by **red dashed line**  
under tidal volume spirogram, then...



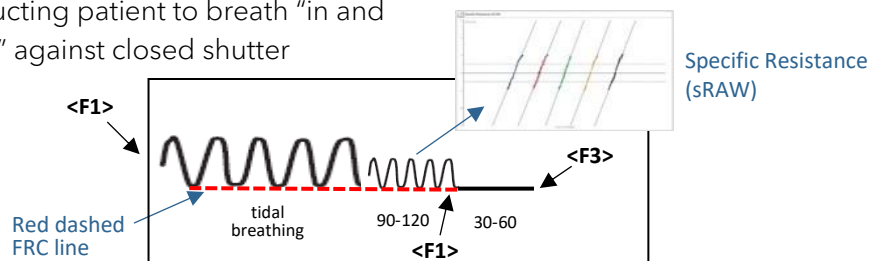
- b) Instruct patient to **start panting** to collect

- five repeatable sRAW loops: **CV < 10%**
- with panting rate: **BF = 90-120/min**



- c) After 5 repeatable sRaw loops collected, click <F1> "Continue" to close shutter

- FRC panting should decrease to BF = 30-60/min and remain gentle and passive
- Continue instructing patient to breath "in and out, in and out" against closed shutter



5. After collection of FRC for resistance, click <F3> "Stop" to end the measurement (no slow VC)

**NOTE:** If shutter re-opens before pressing <F3> and patient continues breathing, then absolute lung volumes (i.e., VC data) will be collected – review trial data and use 'Edit' function if needed.

This should not affect results unless this VC (from sRaw trial) > VC (from FRCpleth trials)



## B. FRCpleth (VTG) Measurements (for FRCpleth values starting with trial 2)

6. **Stable FRC:** Click <F2> "Start" as patient begins breathing quietly

a) Allow patient to continue breathing quietly until stable

b) Wait for stable FRC indicated by **red dashed line** under tidal volume spirogram



7. **FRCpleth:** AFTER **red dashed line** appears, have patient continue tidal breathing ...

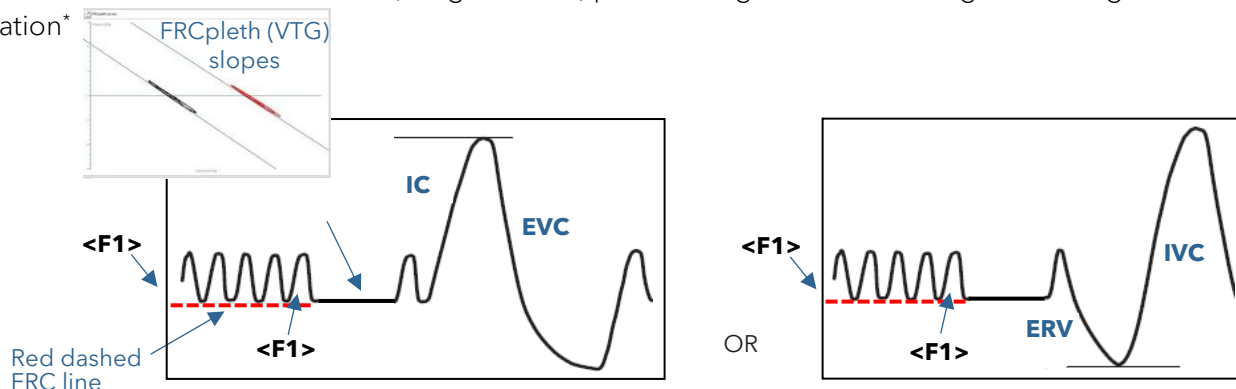


Click <F1> "Continue" to close shutter and measure FRCpleth (VTG)

- Instruct the patient to breath "in and out, in and out" against closed shutter at a rate of 30 to 60 breaths per minute (gentle pants)
- Panting should remain gentle and passive, approx. 1 breath/2 sec



8. **LINKED VITAL CAPACITY (VC):** AFTER shutter opens, have patient **perform slow spirometry** either an **IC-EVC** or an **ERV-IVC** maneuver (images below) per textual guidance and Program Settings configuration\*



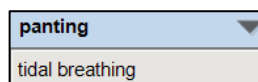
9. Click <F3> "Stop" to end the measurement



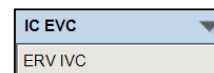
10. To assess **repeatability** for FRCpleth, repeat steps 6-9 (minimum three FRCpleth trials\*\*)

### \*PROGRAM SETTINGS

- 'Evaluation' tab: option to configure 'Type of resistance measurement' to either:
  - 'Panting' (recommended for this workflow): sets 'Trial 1' apart for sRaw collection, 'FRC used in resistance' only recorded in 'Trial 1', no RV and TLC data recorded in 'Trial 1' but possible VC data if performed
  - 'Tidal breathing' (default): sRaw and 'FRC used in resistance' not isolated to 'Trial 1' - collected from any trial started using <F1>, 'FRC used in resistance' is averaged across trials for sRaw, RV and TLC recorded each trial



- Select desired workflow for slow spirometry 'IC EVC' or 'ERV IVC' → **Type of linked VC maneuver**



Note: In ≤3.20, must ensure 'evaluation' settings are correct for lung volume calculations

CAUTION in SentrySuite™ networks: The 'BODY measurement sequence' workflow selection is a 'local' or workstation-only setting, however most other Program Settings are 'global' which will affect all devices in a network!

## **\*\*REPEATABILITY & REPORTING**

- Minimum of three acceptable FRCpleth maneuvers within 5% of each other (i.e., difference between the highest and lowest value divided by the mean is less than or equal to 0.05) and three acceptable slow spirometry maneuvers
- If less than two acceptable FRCpleths collected, report with a note of caution that repeatability could not be assessed

## **REFERENCES**

- SentrySuite™ Body Plethysmography user manual ("EN\_SeS\_Bodyplethysmography.pdf")
- Bhakta NR, McGowan A, Ramsey KA, et al. European Respiratory Society/American Thoracic Society technical statement: standardisation of the measurement of lung volumes, 2023 update. Eur Respir J 2023; 62: 2201519 [DOI: 10.1183/13993003.01519-2022].