

Density Spectral Array with Depth of Anaesthesia Monitoring

Set up for Density Spectral Array on the updated BIS monitor.

1. Press on the BIS number
2. Click on Main display until it highlights "DSA"
3. Click on Home, to return to the Main screen.

Set up for ST & SR on the updated BIS monitor

1. Press on Menu button
2. Click next
3. Click on Display SR
4. Now SR & ST should be visible on top of the EEG.
5. Click on Home, to return to the Main screen.

BIS™ technology with two and four channel display now allows you to customize parameters to individualize anesthetic for each patient. This gives you more information for more insight into each patient's condition:

Suppression Time (ST)
Displays the cumulative time spent in suppressed (isoelectric) state (Hrs:Min:Sec)

Suppression Ratio (SR)
Displays the percent of time over the last 63 seconds that the EEG was flat or isoelectric



Density Spectral Array (DSA)
Graphical representation of the patient's EEG frequency and power (also called spectrogram)

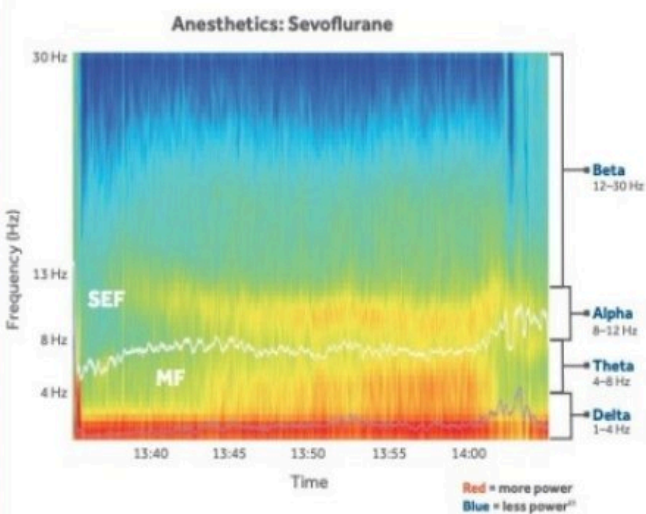
Spectral Edge Frequency (SEF)
White line on the DSA graph – 95 percent of the total power lies below the line and 5 percent lies above

Median Frequency (MF)
Purple line on the DSA graph — 50% of the power is below the line and 50% lies above

EEG Bands
Delta, theta, alpha, and beta now appear to the right of the DSA graph, giving you a visualization of anesthetics given¹⁹

SPECTROGRAM CHANGES UNDER ANESTHETICS

In the Density Spectral Array (DSA), brain waves are now represented in color with a two-dimensional view:



Beta 12–30 Hertz

- Increases during the initial stages of sedation with drugs, including benzodiazepines (versed, valium) and barbiturates (pentobarbital).
- Decreases as anesthesia deepens.^{45,47}

Alpha 8–12 Hertz

- Seen in patients that are awake.
- Activity may increase during deeper anesthetic states.^{45,47}

Theta 4–8 Hertz

Seen during sleep or result of anesthesia.⁴⁸

Delta 1–4 Hertz

- Seen during deep sleep or anesthesia.
- Abnormal in the awake adult.⁴⁸

Aims

- BIS: 30-<60
- DSA: Red (high power) in Delta & Alpha frequencies & "blue sky" (low power) in Beta frequency.
- Suppression Time (ST) & Suppression Ratio (SR): as close to 0 as possible.