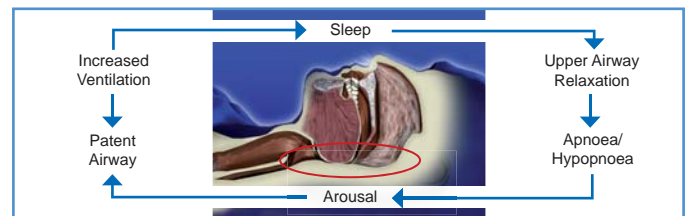
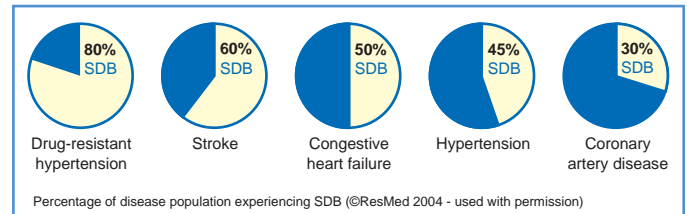


SLEEP DISORDERED BREATHING (SDB) & OBSTRUCTIVE SLEEP APNOEA (OSA)

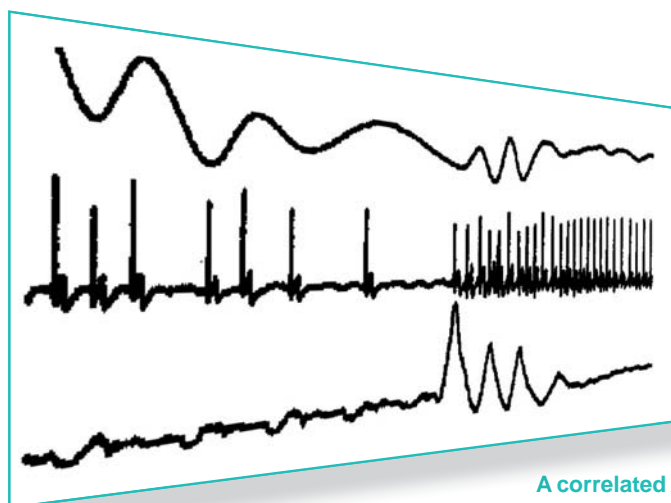
Sleep disordered breathing (obstructive sleep apnoea (OSA), central sleep apnoea, Cheyne-Stokes respiration) is a common comorbidity of heart disease. Recently reported prevalences in clinical populations can be seen opposite.

OSA is the predominant condition whereby the physiology of the throat obstructs the airway when sleeping. People who are obese, with large neck diameters or who have a retrograde chin are particularly susceptible. This obstruction causes the patient to wake, enough to clear their airway before resuming sleep. A small jump in heart rate and blood pressure is also associated. This cycle can occur up to 50 times an hour!



What effect does this have on Cardiac conditions

The negative interthoracic pressure, hypoxia and increased pulmonary artery pressure created by OSA impair cardiac contractility and reduce output. OSA also triggers sympathetic vaso constriction, in addition to the jumps in blood pressure, which eventually lead to hypertension. The disturbed sleep pattern also increases general tiredness, all of which contribute over time to underlying cardiac conditions.



Apnoea Screening using Holter Recorders

How is it currently diagnosed?

Sleep apnoea is currently diagnosed by a polysomnogram or "sleep study" in a sleep lab. Multiple parameters are recorded to determine the apnoeic periods. An overall Apnoea/Hypopnoea (AHI) score is derived from the test for diagnosis.

What does Lifescreen Apnoea do?

The Sleep apnoea analysis option for Lifescreen, determines sleep apnoeic periods from the standard holter recording. No additional hardware or special hook-up is required.

The algorithm:

- Deriving the respiratory waveform from the ECG signal amplitude changes.
- Analysing the changes in the RR interval associated with respiration and sleep apnoea.
- Analysing the power spectral frequencies of heart rate variability.

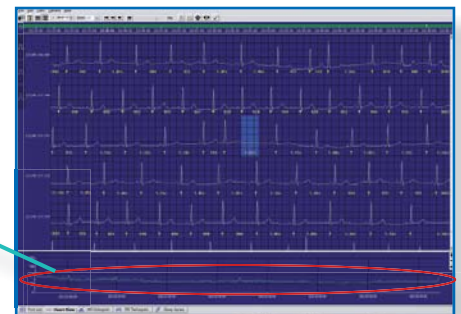
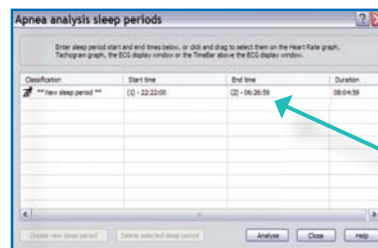
A correlated AHI is then produced with supporting graphs and trends. This can be for one sleep period or multiple sleep periods if a 7-day recording is analysed.

SLEEP DISORDERED BREATHING (SDB) & OBSTRUCTIVE SLEEP APNOEA (OSA)

How do you use Lifescreen Apnoea?

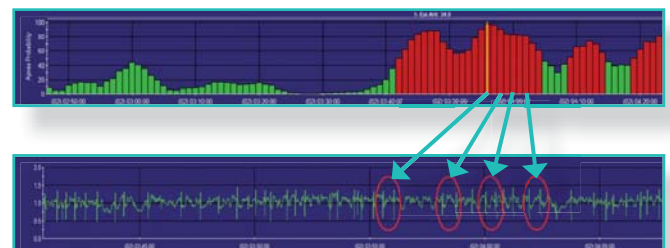
Firstly review the recording, looking for any Cardiac related events that you need to document. Then:

1. Define a sleep period to be analysed from the recording:



2. Correlate Apnoea episodes with RR graphs

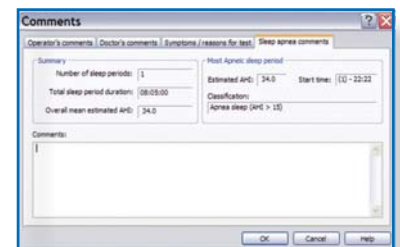
Apnoeic events are identified to a one minute resolution. Scores of over 50% AHI are displayed in red to give a clear indication of the severity of Apnoea. The corresponding tachogram for the same period as the apnoea graph shows the cyclic changes in RR intervals corresponding to the apnoea.



3. Add comments and printout report

The report includes:

- Number of sleeping periods
- Total duration of sleeping periods
- Overall mean estimated AHI
- Most apnoeic period's estimated AHI
- Most apnoeic period's classification



Sentinel - Connectivity in Cardiology



Sentinel fully integrates reports from our entire range of noninvasive diagnostic cardiology procedures: Holter monitoring, ambulatory BP monitoring (ABPM), 12-lead ECG, and ECG stress

testing. Sentinel organizes the data and stores both details and recordings in a central, networked database – saving time in searching for records and improving your efficiency.

We designed Sentinel to work the way you want to – it puts you in control. When

you control the workflow, you have greater flexibility to coordinate your procedures, further improving your day-to-day efficiency. You will find that it's innovative capabilities increase the effectiveness with which clinical data is handled while maximizing capital and operating budgets.

www.spacelabshealthcare.com



Spacelabs Healthcare Limited
1 Harford Court, John Tate Road
Hertford, SG13 7NW, United Kingdom

Telephone: +44 (0)1992 507700
Fax: +44 (0)1992 501213



1800 67 5432 0800 300 421
 1800 67 5433 0800 300 422
sales@ecomед.com.au sales@ecomед.co.nz
www.ecomed.com.au www.ecomed.co.nz

© 2009 Spacelabs Healthcare
Specifications subject to change without notice
C1016-ap09 / Drg No. 000_1094 RevA