NREM:

Non-rapid eye movement sleep is otherwise known as synchronised electroencephalography and comprises 4 main stages with cycles normally lasting 90 minutes.

Stage 1: (Shallow Sleep)

This is characterised by irregular frequency and smaller amplitude. Heart rate and muscle decreases, and this stage is usually indicated by vertex spikes and theta waves on an EEG.

Stage 2:

The individual is less easily aroused at this stage, and the most notable characteristic of this stage is the presence of sleep spindles which are bursts in the sigma band frequency. These help inhibit certain cognitive processes in order to promote tranquillity.

The presence of K complexes on the EEG is also a hallmark feature of this stage of sleep, and these suppress cortical arousal and promote sleep based memory consolidation.

Stage 1 & 2 rhythmic activity is generated by thalamic and cortical neurons.

Stage 3:

This stage is characterised by large amplitude with a low frequency within the deligibard, with the individual becoming less inclined to becoming aroused. There is minimal exponentiations activity.

Note

Stage 4:

The sleeper even harder to arous, in this stage constitutes for 50% of normal sleep.

Stage 3.8.4 is a count as slow wave deep and hydramic activity is generated by cortical neurons. Periods of SWS increase after sleep deprivation, however the need for it rapidly declines through age, with most individuals aged over 60 exhibiting no signs of slow wave sleep.

REM:

This is characterised by EEG activation with high frequency and small amplitude, which bears similarity to wakefulness. Most dreams occur at this stage, however muscles are rendered paralysed therefore this stage is also known for inducing paradoxical sleep.

At birth, animals born with immature nervous systems have a much higher percentage of REM sleep than do the adults of the same species. For example, sleep in the human new-born occupies twothirds of time, with REM sleep occupying half of their total sleep time which ranges from 17-18 hours. In adults, REM only constitutes for 20% of the total sleep time which ranges from 7-8 hours.