A horse sleeps standing up. Some horses who don't lie down at all have been found by researchers to only achieve seconds or minutes of REM sleep

The NHS describes good sleep hygiene for humans as healthy habits (diet and exercise), routine times for sleep and rest and creating an environment that promotes sleep. Hartpury's research is seeking to understand these principles from an equine point of view.

Following on from that first study into shavings versus straw, the team has gone on to study bedding depths. From their findings, Linda advises: "All stabled horses should be provided with bedding to a depth of 10cm or more to provide an environment that encourages sleep."

Noise nuisance

Noise is another important part of the sleep environment. One of Hartpury's studies that was completed earlier this year looked at 'pink noise', a low-frequency sound that has proved to be effective in facilitating sleep for humans. It works by slowing brain waves and/or masking other noises that could disturb sleep. Linda and two undergraduate students wanted to see if it would have the same impact on horses.

Six horses of mixed age, breed and height were observed over three consecutive 72-hour periods in their usual stables. Pink noise was played in the second 72-hour period, with no noise in the 72-hour periods before and after.

"We found that total sleep time was significantly higher for horses in phase 2 [with the pink noise]," says Linda. "We think further exploration of pink noise for horses is warranted based on these findings as it may prove helpful when they're in new surroundings."

Research has shown that sleep duration for horses was greater when their under-rug temperature was 20-24°C

To rug or not to rug?

Temperature is also important — and to rug or not to rug is a dilemma that most equestrians will be familiar with.

"Dissipation of heat (or cooling down) is a major cue for the onset of sleep, so we wanted to see how rugging can influence equine sleep profiles," says Linda.

The Hartpury team conducted a pilot study and were surprised by the findings.

"When under-rug temperatures were between 20-24°C, total sleep time was greater than when the temperature was higher or lower. In a second study we found that the horses with a higher under-rug temperature engaged in greater durations of sternal recumbency and lateral recumbency [lying down]. To investigate further we looked at the time to sleep onset and found that horses with lower under-rug temperatures took longer to go to sleep."

The team is currently investigating this factor further with a larger sample of horses.