



# Sleep quality

## How Korean Red Ginseng has beneficial effects on sleep quality

### Background

#### Theory

##### The effect of Korean red ginseng (KRG) on sleep:

The ginseng root has been traditionally used as a sedative in oriental countries. However, the condition "ginseng abuse syndrome", was coined as a result of a study of people who had been using a variety of ginseng preparations. However, we reported that administration of KRG increased rapid eye movement and non rapid eye sleep via GABAergic systems in animals. Therefore, this study was performed to investigate KRG affects sleeping behaviors in human volunteers.

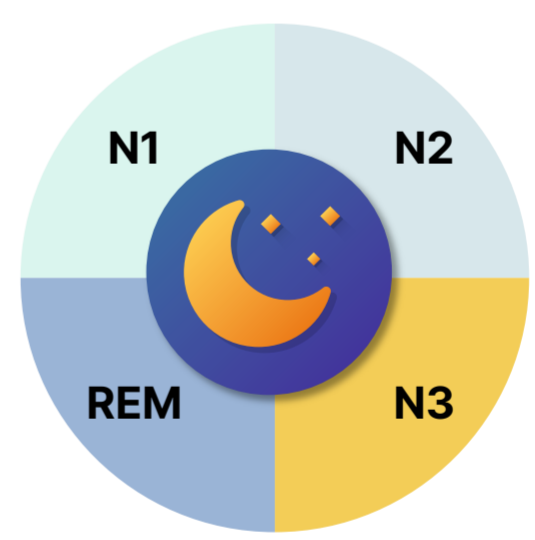
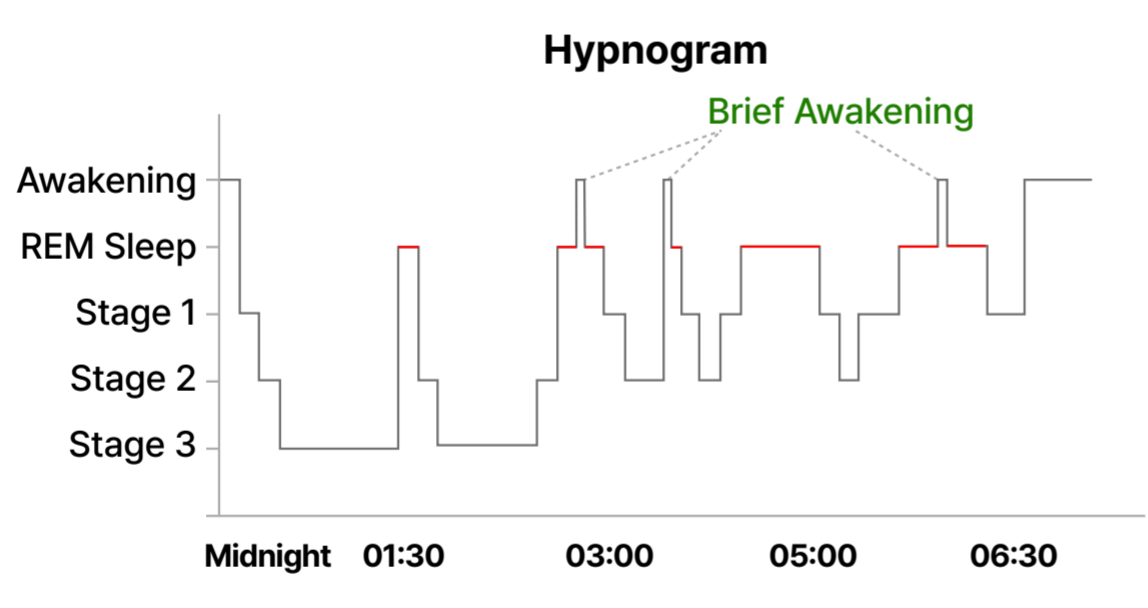
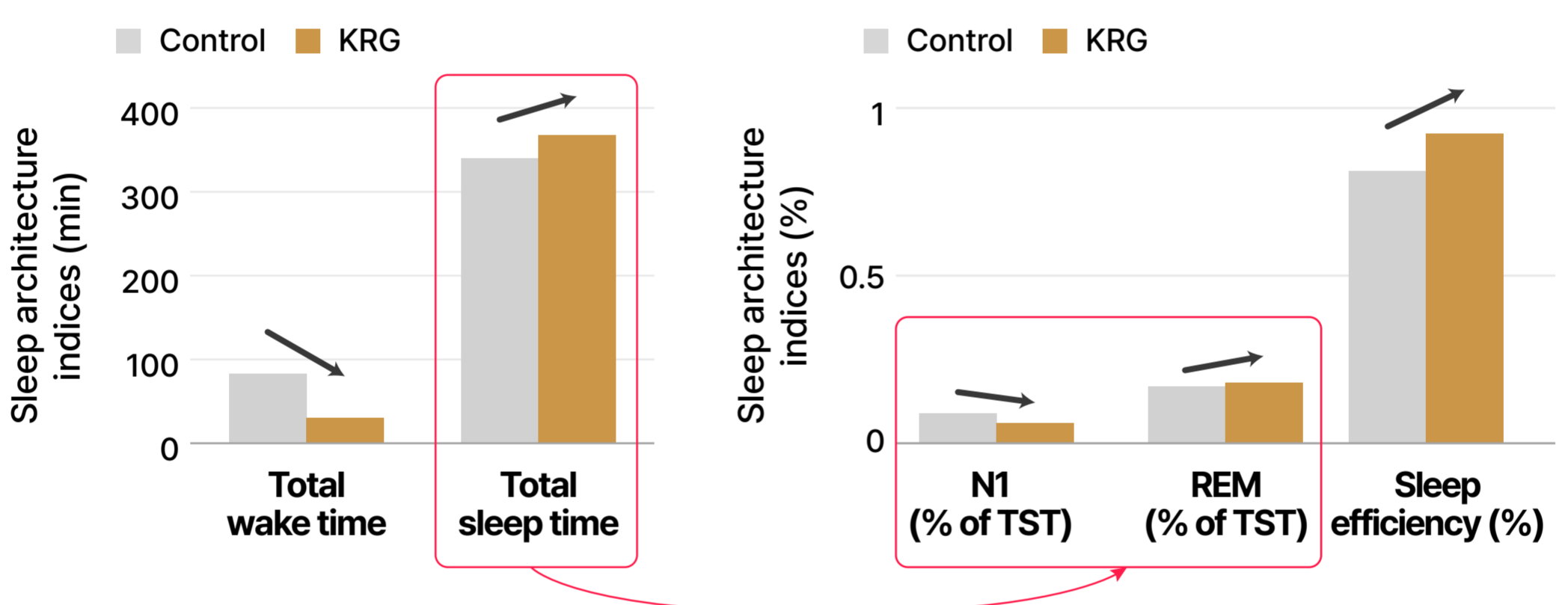
#### Method

KRG (1500mg) was orally administered to young male healthy volunteers (age: 15-37, n=15) three times a day for 7 days. Overnight polysomnographic studies were performed two times, 1 day before and 7 days after KRG administration. We investigated differences in sleep architecture parameters such as total sleep time, sleep efficacy, proportion of each sleep stage, and wakefulness after sleep onset between baseline PSG and PSG after KRG administration.

### Outcome

With healthy male volunteers (15-37 yrs) taking 1,500 mg KRG 3 times/day for 7 days

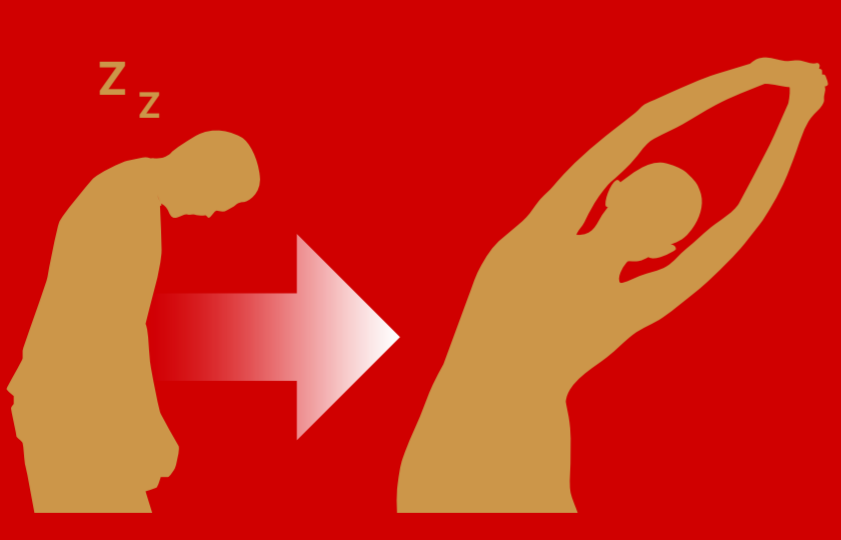
#### Sleep architecture



Stage 1 proportion (% of total sleep time) of slow wave sleep and total wake time was significantly decreased, but REM sleep and sleep efficiency were increased after KRG administration.

Sleep architecture: Basic structural organization of normal sleep (Non-rapid eye-movement sleep & Rapid eye-movement sleep)

- N1 (stage 1 sleep): Transition period between wakefulness and sleep, bursting of alpha waves between stretches of relaxed brain activity
- REM (Rapid eye movement) sleep: Deepest state of sleep when dreaming; when body becomes relaxed and immobilized, and eyes move rapidly
- Total wake time: The amount of wake time during the total recording time in minutes after the sleep onset
- Sleep efficiency: The percentage of time spent asleep while in bed
- Total sleep time: The number of minutes asleep in bed after lights off, considering only night-time sleep



#### Impact



##### Korean Red Ginseng as an effective supplement for sleep

Administration of Korean red ginseng significantly reduced the total wake time and increased the sleep efficiency, while reducing N1 and improving REM sleep.

### Conclusion

#### The benefit of Korean Red Ginseng on sleep quality

From these results, it is presumed that **KRG intake does not interfere with sleep, but rather improves the quality of sleep, thus having beneficial effects on sleep disturbed subjects.**