

CLAIMS

1. A nap evaluation device, comprising:
 - a first acquisition unit configured to acquire time information regarding a time during which a user is napping;
 - a second acquisition unit configured to acquire a sleep stage of the user who is napping;
 - an evaluation unit configured to evaluate a quality of a nap in accordance with the time information and the sleep stage; and
 - a fourth acquisition unit configured to acquire wakefulness information regarding a level of wakefulness of the user in a time period from a timing at which the user who is napping in a napping place awakens and to when the user leaves the napping place,
 - the evaluation unit making an evaluation that the lower a ratio of a second sleep time to a first sleep time is, the higher the quality of the nap,
 - the first sleep time being a sleep time in light sleep during which the sleep stage is relatively light in a nap time from a start to an end of the nap, the second sleep time being a sleep time in deep sleep during which the sleep stage is relatively deep in the nap time,
 - the evaluation unit making an evaluation that the shorter a time of a wakefulness state between the start to the end of the nap is, the higher the quality of the nap,
 - the time of the wakefulness state including a time from the start of the nap to a timing at which the user falls asleep and a time from the timing at which the user awakens to the end of the nap,
 - the evaluation unit
 - estimating, further based on the wakefulness information, a recovery time in which the user becomes awake after the end of the nap, and
 - making an evaluation that the shorter the recovery time is, the higher the quality of the nap.

2. The nap evaluation device of claim 1, wherein
the evaluation unit makes an evaluation that the shorter the nap time is, the higher the quality of the nap.
3. The nap evaluation device of claim 1 or 2, wherein
the sleep stage is a value determined with reference to biological information on the user.
4. The nap evaluation device of any one of claims 1 to 3, further comprising a third acquisition unit configured to acquire a sleep onset time which is a time until the user falls asleep, wherein
the evaluation unit further makes an evaluation that the shorter the sleep onset time is, the higher the quality of the nap.
5. The nap evaluation device of any one of claims 1 to 4, wherein
the light sleep includes a sleep stage 2 which is second lightest of four sleep stages 1 to 4 into which non-REM sleep is classified from light to deep sleep, and
the evaluation unit further makes an evaluation that the longer a continuation time for which the sleep stage 2 continues is, the higher the quality of the nap.
6. The nap evaluation device of any one of claims 1 to 5, wherein
the evaluation unit evaluates the quality of the nap further with reference to the wakefulness information at a timing at which the prescribed time elapses since the end of the nap.
7. The nap evaluation device of any one of claims 1 to 6, further comprising an output unit configured to output an evaluation result by the evaluation unit.
8. A nap evaluation system, comprising:
the nap evaluation device of any one of claims 1 to 7; and

a display configured to present an evaluation result by the evaluation unit.

9. The nap evaluation system of claim 8, wherein
 - the display is configured to present the evaluation result by the evaluation unit and a past evaluation result acquired from a storage unit configured to store evaluation results by the evaluation unit in a comparative manner.
10. A nap evaluation method, comprising:
 - a first acquisition process of acquiring time information regarding a time during which a user is napping;
 - a second acquisition process of acquiring a sleep stage of the user who is napping;
 - an evaluation process of evaluating a quality of a nap in accordance with the time information and the sleep stage; and
 - a fourth acquisition process of acquiring wakefulness information regarding a level of wakefulness of the user in a time period from a timing at which the user who is napping in a napping place awakens and to when the user leaves the napping place,
 - in the evaluation process, an evaluation being made that the lower a ratio of a second sleep time to a first sleep time is, the higher the quality of the nap,
 - the first sleep time being a sleep time in light sleep during which the sleep stage is relatively light in a nap time from a start to an end of the nap, the second sleep time being a sleep time in deep sleep during which the sleep stage is relatively deep in the nap time,
 - in the evaluation process, the evaluation being made that the shorter a time of a wakefulness state between the start to the end of the nap is, the higher the quality of the nap,
 - the time of the wakefulness state including a time from the start of the nap to a timing at which the user falls asleep and a time from the timing at which the user awakens to the end of the nap,
 - in the evaluation process, a recovery time in which the user becomes awake after

the end of the nap being estimated further based on the wakefulness information, the evaluation being made that the shorter the recovery time is, the higher the quality of the nap.

11. A program configured to cause one or more processors to execute the nap evaluation method of claim 10.