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Selección Vida

THE DREAM

A night journey to health

A NIGHT JOURNEY TO HEALTH:

THE ALARMING CONSEQUENCES OF NOT GETTING ENOUGH SLEEP

Let's imagine that our brain, instead of switching off like a light bulb, is transformed into a stage where different acts of a night-time play are performed. Each act corresponds to a phase of sleep, with its own protagonists, dialogue and purpose.

This is because the sleep period is not a uniform state, but rather a cycle that is repeated an indeterminate number of times throughout the night, alternating between two main types: Non-REM sleep (NREM) and REM sleep. Each cycle lasts approximately 90-120 minutes.

PHASES OF SLEEP

NREM sleep accounts for about 75-80% of total sleep time and is divided into three progressive phases (Table 1):

TABLE 1.**PHASES OF SLEEP**

Phase N1	The fading threshold	5-10 minutes per cycle
Phase N2	The descent into calm	20-30 minutes per cycle, increasing with each cycle
Phase N3	Deep sleep	20-40 minutes per cycle, more abundant in the first half of the night

PHASE N1

This is the time of transition between wakefulness and sleep. Our breathing and heart rate begin to slow down, our muscles relax and our brain waves, which during wakefulness are fast and erratic (beta waves), become slower and more regular (alpha and theta waves).

It is easy to wake up in this phase, and we may often have the sensation of falling or experience myoclonic jerks (those sudden spasms that make you jump). It is as if our body is resisting leaving wakefulness.

PHASE N2

Here we are already immersed in a deeper sleep. Our heart rate and body temperature continue to decrease and brain waves become even slower, with the occasional appearance of rapid bursts of electrical activity called sleep spindles and K-complexes. This phase is thought to play an important role in memory processing and learning. Waking up in this phase is a little more difficult, but still possible.

PHASE N3

The brain waves are the slowest of all (delta waves), our heart and breathing rates are minimal and our muscles are completely relaxed. It is very difficult to wake up in this phase, and if we do we will feel disoriented and groggy.

During deep sleep, the body releases growth hormone, essential for tissue repair, muscle growth and immune function.

REM SLEEP

After the N3 phase, the sleep cycle briefly regresses to the N2 phase before giving way to the fascinating REM sleep, which occupies approximately 20-25% of the total sleep time. This phase is a real contrast to NREM sleep:

- **Brain active, body paralysed:** Our brain activity resembles that of wakefulness, with rapid, desynchronised brain waves. However, skeletal muscles are virtually paralysed (muscle atonia), except for the eye muscles and those responsible for breathing.
- **Rapid eye movements:** As the name suggests, our eyes move rapidly from side to side under our closed eyelids. The exact function of these movements is not yet fully understood, but they are thought to be related to the processing of visual information during dreams.
- **Vivid and emotional dreams:** Most dreams occur during REM sleep and tend to be more vivid, elaborate and emotionally intense. It is during this phase that the brain processes emotions, consolidates memories (especially emotional and procedural ones) and performs a kind of 'mental cleansing'.
- **Irregular heart and respiratory rhythm:** Unlike NREM sleep, our heart rate and breathing rate can become faster and more irregular during REM sleep, fluctuating in response to the emotional content of your dreams.

SEVEN MAGIC HOURS FOR A HAPPY HEART

Now that we know the ins and outs of the overnight journey, the crucial question arises: how much time should we devote to this adventure in order to stay healthy, especially in terms of our cardiovascular system?

Most experts agree that, for adults, the optimal sleep duration is around 7-8 hours per night. However, the magic number that has consistently been shown to be associated with a lower risk of cardiovascular disease is around 7 hours of quality sleep per night.

Numerous epidemiological studies have revealed a U-shaped relationship between sleep duration and cardiovascular risk. Both too little sleep (less than 6 hours) and too much sleep (more than 9 hours) have been associated with an increased risk of developing high blood pressure, coronary heart disease, stroke and even cardiovascular mortality.

Seven hours of quality sleep allows several sleep cycles to be completed, ensuring an adequate ratio of deep restful sleep to REM sleep for emotional processing and memory consolidation. This balance is crucial for a number of physiological processes that directly impact cardiovascular health:

- **Blood pressure regulation:** During sleep, blood pressure tends to fall. Insufficient sleep interrupts this nocturnal decline, keeping blood pressure elevated for longer and encouraging the development of hypertension.
- **Control of glucose metabolism:** Lack of sleep alters insulin sensitivity and blood sugar regulation, increasing the risk of insulin resistance, pre-diabetes and type 2 diabetes, all of which are important cardiovascular risk factors.
- **Reducing inflammation:** Sleep plays an important role in regulating the immune system and reducing chronic low-grade inflammation, a key process in the development of atherosclerosis (the build-up of plaque in the arteries). Sleep deprivation is associated with an increase in inflammatory markers.
- **Hormonal balance:** Adequate rest is essential for the regulation of hormones such as cortisol (the stress hormone) and the hormones that control appetite (ghrelin and leptin). Lack of sleep can raise cortisol levels, increase appetite and promote weight gain, factors that contribute to cardiovascular risk.
- **Healthy endothelial function:** The endothelium is the inner layer of blood vessels and plays a crucial role in regulating vascular tone and preventing clot formation. Sleep deprivation can impair endothelial function, increasing the risk of cardiovascular events.

What happens when, night after night, we steal hours of sleep? The consequences for our health, and especially for our heart, can be alarming, as shown in Table 2.

TABLE 2. **RISKS OF SLEEP DEPRIVATION**

Increased risk of hypertension	Chronic lack of sleep forces our cardiovascular system to work harder, keeping blood pressure elevated even during the night.
Increased likelihood of coronary heart disease and stroke	Chronic inflammation, endothelial dysfunction and impaired glucose metabolism, all exacerbated by sleep deprivation, significantly increase the risk of myocardial infarction and stroke.
Heart rhythm dysregulation	Lack of sleep can disrupt the autonomic nervous system, leading to cardiac arrhythmias.
Increased risk of type 2 diabetes mellitus	Sleep deprivation-induced insulin resistance paves the way for the development of type 2 diabetes, a potent cardiovascular risk factor.
Increased risk of obesity	Hormone dysregulation caused by lack of sleep can increase appetite for unhealthy foods and hinder weight loss, contributing to obesity, another important cardiovascular risk factor.
Daytime fatigue and reduced performance	Lack of sleep affects not only our body, but also our mind, causing fatigue, difficulty concentrating, memory problems and reduced cognitive and physical performance.
Weakened immune system	Lack of sleep compromises immune function, making us more susceptible to infections which, in some cases, can have an indirect impact on cardiovascular health.
Impact on mental health	Sleep deprivation is associated with an increased risk of anxiety, depression and stress, factors that can also negatively influence cardiovascular health.

THE DREAM UNDER THE SPOTLIGHT OF INSURANCE

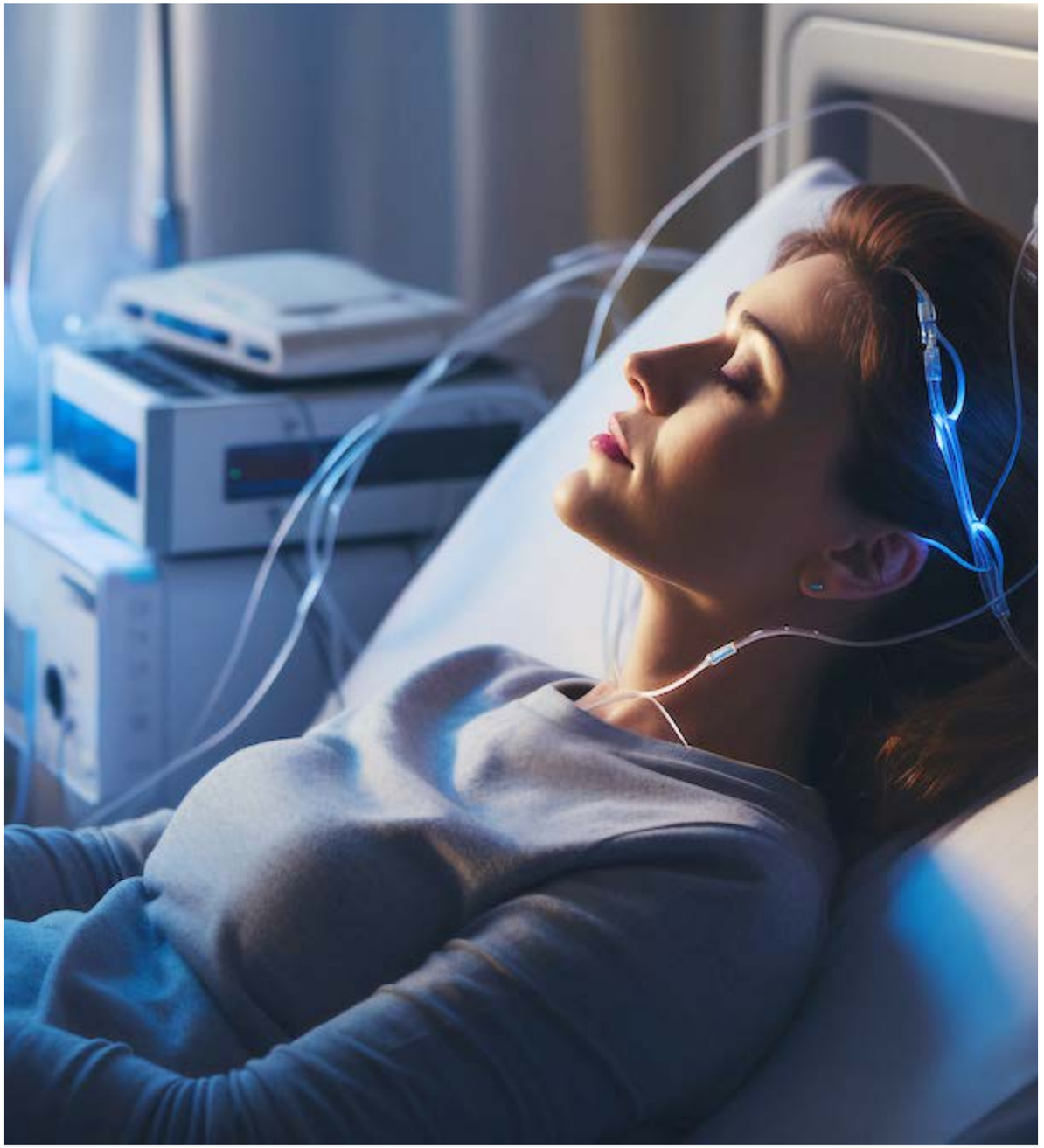
Now, let's delve into the world of insurance and see how the quality and duration of sleep, that often underestimated factor, can have a tangible impact on policies and risk statistics.

Long-term studies have consistently shown that both too short and too long sleep duration are associated with an increased risk of mortality from various causes, including cardiovascular disease. Insurance companies, when analysing actuarial data, could begin to consider sleep patterns as a predictor of life expectancy. Individuals who chronically sleep less than 6 hours or more than 9 hours could be perceived as a higher risk group, which could influence life insurance premiums.

Chronic sleep deprivation is also associated with reduced cognitive performance, daytime fatigue and an increased risk of occupational accidents. This could translate into more days off work due to fatigue-related illness or injury. Insurance policies covering temporary disability may be affected by policyholders' sleep patterns, especially in professions that require a high level of attention and concentration or involve irregular work shifts that make it difficult to get adequate rest.

Daytime sleepiness caused by lack of sleep is also a significant risk factor for traffic accidents and accidents at work. Reactivity decreases, attention is scattered and the risk of making mistakes increases considerably. Car insurance companies and occupational accident insurance companies could start to consider sleep habits as a factor in the assessment of accident risk. Incentive programmes could even emerge for policyholders who demonstrate healthy sleep patterns.

Chronic complications of cardiovascular and metabolic diseases (such as diabetes), whose development and progression are negatively influenced by lack of sleep, are important causes of permanent disability. If sleep deprivation contributes to the early development or exacerbation of these conditions, it may indirectly increase the risk of long-term disability. Disability insurance policies could, in the future, take into account sleep patterns as a long-term risk factor.



THE FUTURE OF SLEEP IN INSURANCE MEDICINE

Although we are still in the early stages of integrating sleep into risk assessment by insurers, it is likely that in the future we will see greater attention to this factor.

The rise of wearable devices that monitor sleep (activity wristbands, smartwatches) could provide insurance companies with objective data on the sleep patterns of their policyholders, as long as privacy and data protection regulations are respected.

We could see more personalised models in the insurance market that offer lower premiums to individuals who consistently demonstrate healthy sleep habits, thereby encouraging better sleep and promoting disease prevention.

Insurance companies could implement some initiatives to help prevent excess mortality:

Outreach campaigns: through its channels (web, social media, email, mobile apps) highlighting the benefits of adequate sleep for cardiovascular health, accident prevention and reducing the risk of various chronic diseases.

PERSONALISED EDUCATIONAL CONTENT: they could offer specific educational content to their policyholders based on their risk profiles and sleep habits, provided that such information is available.

WELLNESS PROGRAMMES: integrate sleep into wellness and prevention programmes through rewards for achieving healthy sleep targets (discounts on premiums, points redeemable for benefits).

COLLABORATION WITH SLEEP TECHNOLOGY COMPANIES: Establish partnerships with companies that develop wearable devices or sleep monitoring applications. They could offer

discounts or preferential access to these products to their policyholders, encouraging monitoring and awareness of their own sleep patterns.

SLEEP SCREENING QUESTIONNAIRES: Incorporate simple sleep screening questionnaires into risk assessment forms.

In any case, it is important to avoid discrimination, it is essential to avoid any form of segregation based on sleep patterns, ensuring that initiatives are focused on health promotion and prevention, not criminalisation.

By implementing these recommendations, insurance companies could not only contribute to improving the health and well-being of their policyholders and reduce excess excess mortality, but could also reap long-term benefits in terms of reduced claims costs and a brand image that is more committed to health and prevention.

TO FIND OUT MORE

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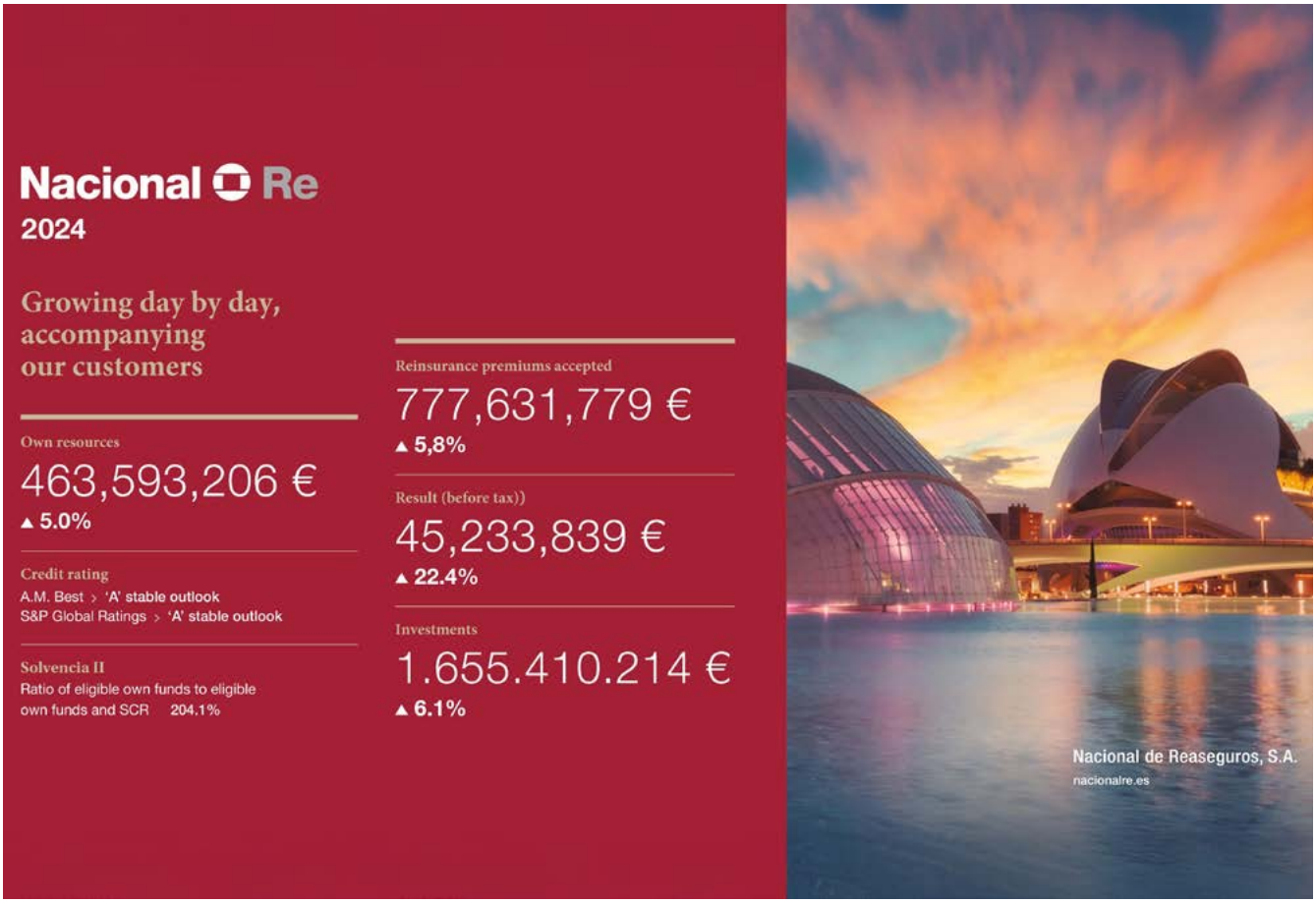

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