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Information & Support



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## ABOUT THE BRAIN FOR BRAIN DAY – HORMONES

Have you ever wondered why you eat chocolate when you are sad? The answer lies in the operation of the brain's hormones. Hormones have an overwhelming effect on regulating brain function and on mood and behaviour. They work by transferring important information between brain cells and can cause huge changes in the body and mind.

### UNDERSTANDING THE BRAIN

The brain is one of the most fascinating organs – it is responsible for controlling everything from simple functions such as breathing to complex cognitive processes. And hormones are involved in regulating it, affecting our mood, memory and behaviour. Therefore, understanding the functioning of these two components is extremely important for health, mental wellbeing and everyday existence in general.

### HORMONES AND THEIR EFFECTS ON THE BRAIN

Hormones are small molecules produced by various glands in the body. Their function is to regulate and coordinate chemical processes in cells and tissues. They are also responsible for a number of physiological processes. There are many different hormones in the brain and spinal cord, each with its own unique function.

One of the most important hormones in the brain is **serotonin**. It is called the happiness hormone because it affects mood and emotions. Low levels of serotonin are associated with depression and anxiety, while high levels are associated with feelings of joy and satisfaction.

Another important brain hormone is **dopamine**. It is responsible for regulating the reward and pleasure centre. When we experience something pleasant, the brain releases dopamine, which motivates us to continue with the activity and to repeat it.

**Oxytocin**, on the other hand, is a hormone that influences how we function in social relationships. It is called the love hormone and is responsible for creating emotional bonds. Oxytocin is released during intimate physical contact such as kissing and cuddling, as well as during childbirth and breastfeeding, which strengthens the bond between mother and child.



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Find out more about hormones from the fascinating book [The power of hormones. The new science of how hormones shape every aspect of our lives](#), authored by Max Nieuwdorp

#### EFFECTS OF HORMONES ON MEMORY, STRESS RESPONSES AND SOCIAL BEHAVIOUR

- **Memory** – hormones are involved in the process of memory formation. For example, **adrenaline**, the stress hormone, can help to enhance memory during a stressful situation. This is why we remember a rollercoaster ride well, for example – the adrenaline helps to enhance the experience of the event. Another important hormone associated with memory is **cortisol**. It is secreted at times of stress and can have both positive and negative effects on memory. High levels of cortisol can make it difficult to concentrate and remember information, while moderate levels make it easier.
- **Stress** – stressful situations lead to an increase in hormones such as **adrenaline** and **cortisol**, which prepare the body for fight or flight. Adrenaline is responsible for increasing energy and concentration, functioning as a stimulus that mobilises action and helps you survive difficult situations. Cortisol, on the other hand, regulates the stress response over a longer period of time. However, persistently high levels of cortisol can lead to negative effects such as a weakened immune system and problems with concentration.
- **Social behaviour** – **oxytocin** is important in social situations to help form emotional bonds. It acts a bit like a ‘fidelity hormone’, enabling the formation of lasting relationships. Another important hormone associated with social behaviour is **dopamine**; it is responsible for the feeling of pleasure and reward, which influences our motivation and behaviour in social relationships.

#### HORMONAL REGULATION AND WAYS TO OPTIMISE BRAIN HEALTH

Although we cannot directly control the brain's hormones, there are many ways to optimise hormonal balance. Here are some examples:

- Healthy diet – balanced meals, rich in vitamins and minerals
- Regular physical activity – improves mood and reduces stress.
- Adequate sleep – this is a very important factor, so you need to make sure you get the right amount of sleep each night.
- Stress management – using relaxation techniques such as meditation.

Knowing about the influence of hormones on our behaviour can help us understand some of our reactions and ensure our wellbeing and good relationships with others.

*Don't wait, call us! If you want to look after your wellbeing, contact a specialist. We are here to support you!*