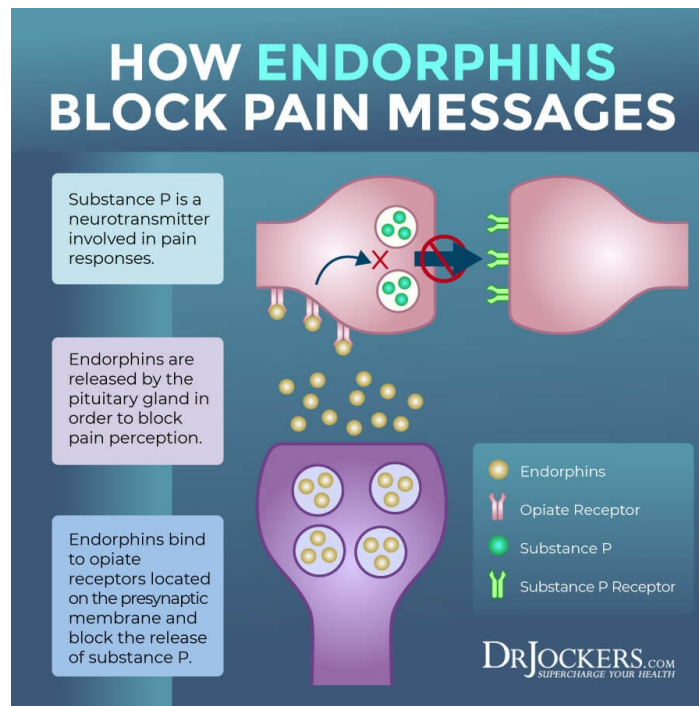


# Endorphins (opiates) and the Brain



This short video will show you how opiates impact the brain:

Video @ <https://vimeo.com/599227578vv> (2:10 minutes)

Endorphins function in the brain similarly to opium-based drugs, such as morphine. In this lesson, learn more about the importance of these brain chemicals and gain a better understanding of how they work.

Chemically, endorphins are neurotransmitters. This means that they are chemical messengers employed by our nervous system. Neurotransmitters are important because they bridge the gaps, or synapses, between neurons. When impulses are traveling along neurons, neurotransmitters carry the signal from one neuron to the next, like a child hopping across a stream on large rocks.

Now think back to the marathon training we were talking about. You are feeling the pain in your legs and burning in your chest. The sensation of pain is moving from your body parts to your brain via impulses conducted along nerves in your nervous system. Like a note being passed in class from student to student, the communication that says, 'this hurts,' is transmitted to the brain along a series of neurons.

Once the signal reaches the brain, this feeling is processed, and your first thought is, 'ouch!' In some instances when you experience pain, you do what you need to in order to remove that painful stimulus. However, in this situation, you know that this is not a life-or-death type of pain, so you keep running. The brain, which has the ability to regulate pain perception, signals the release of endorphins. So how do they work to help you move past the pain?


First, endorphins block the transmission of the pain signals. Remember those pain impulses that were being conducted via the neurons to the brain? Endorphins gather in the gaps between neurons and create roadblocks on the neuron superhighway so that the sensation of pain cannot actually reach the brain. Like a police barricade blocks traffic, endorphins block the pain signal.

Second, endorphins bind to receptors in the brain, known as opiate receptors, to trigger the feeling of pleasure. Does the word 'opiate' look familiar? Yes indeed, 'opiate' pertains to substances made from opium. Interestingly enough, there are neurons in the brain that contain receptors for opium-based drugs, such as heroin and morphine. These happen to be the same receptors to which endorphins attach. That's why we feel both euphoria and reduced pain when endorphins are released.

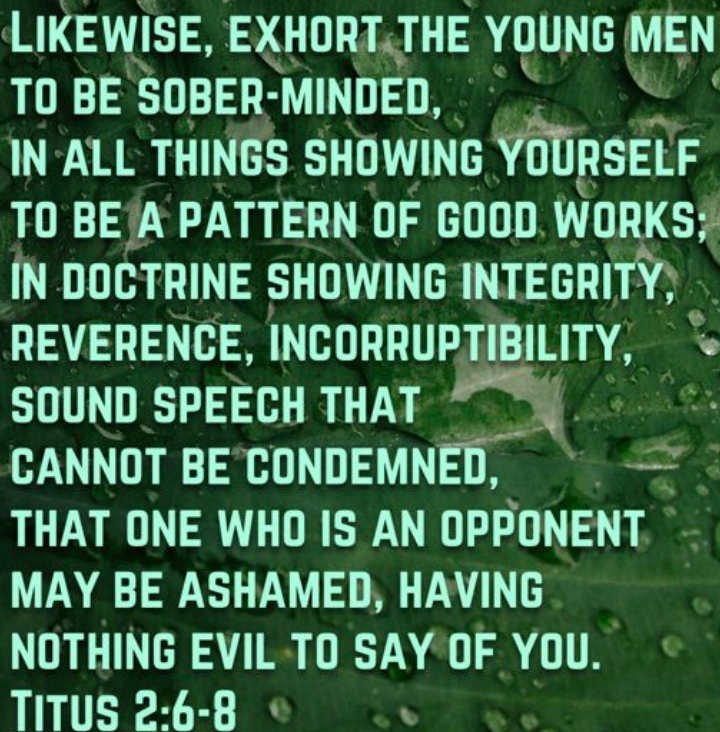
(adapted from Wendy McDougal @ study.com)

The following Scriptures are neurospiritual because they warn us to be “sober” (abstain from using intoxicants for pleasure), because drugs and alcohol harm the brain and lead to ruin.

## 1 Peter 5:6-9



“Therefore humble yourselves under the mighty hand of God, that He may exalt you in due time, casting all your care upon Him, for He cares for you. Be sober, be vigilant; because your adversary the devil walks about like a roaring lion, seeking whom he may devour. Resist him, steadfast in the faith, knowing that the same sufferings are experienced by your brotherhood in the world” (NKJV).



**LIKewise, EXhort the young men to be sober-minded, in all things showing yourself to be a pattern of good works; in doctrine showing integrity, reverence, incorruptibility, sound speech that cannot be condemned, that one who is an opponent may be ashamed, having nothing evil to say of you.  
TITUS 2:6-8**

## TITUS 2:11-12

The GRACE of GOD...  
bringing SALVATION  
to all people.

We are *instructed* to TURN  
from **godless living** and  
**sinful pleasures.**

We should *live* in this  
**evil world** with  
*wisdom, righteousness, and*  
*devotion* to GOD,



and be not drunk with wine  
which leads to debauchery

**but be filled  
with the Spirit**

Ephesians 5:18



## **Endorphins (opiates) and the Brain**

Test and Answers

What are endorphins?

Chemically, endorphins are neurotransmitters.

How does the brain regulate pain?

The brain, regulates pain perception by signaling the release of endorphins.

What are the two ways that endorphins regulate pain?

First, endorphins block the transmission of the pain signals. Endorphins gather in the gaps between neurons and create roadblocks on the neuron superhighway so that the sensation of pain cannot actually reach the brain. Like a police barricade blocks traffic, endorphins block the pain signal.

Second, endorphins bind to receptors in the brain, known as opiate receptors, to trigger the feeling of pleasure. There are neurons in the brain that contain receptors for opium-based drugs, such as heroin and morphine. These happen to be the same receptors to which endorphins attach. That's why we feel both euphoria and reduced pain when endorphins are released.

Why are 1 Peter 5:8, Titus 2:2,3,6 and Titus 2:11 neurospiritual Scriptures?

These passages warn us to be “sober,” and sober means to abstain from using intoxicants for pleasure like drugs and alcohol, because they harm the brain and lead to ruin.

Why is Ephesians 5:18 a neurospiritual Scripture:

This neurospiritual passage explains how to avoid ruin, have a healthy mind and enjoy a blessed life