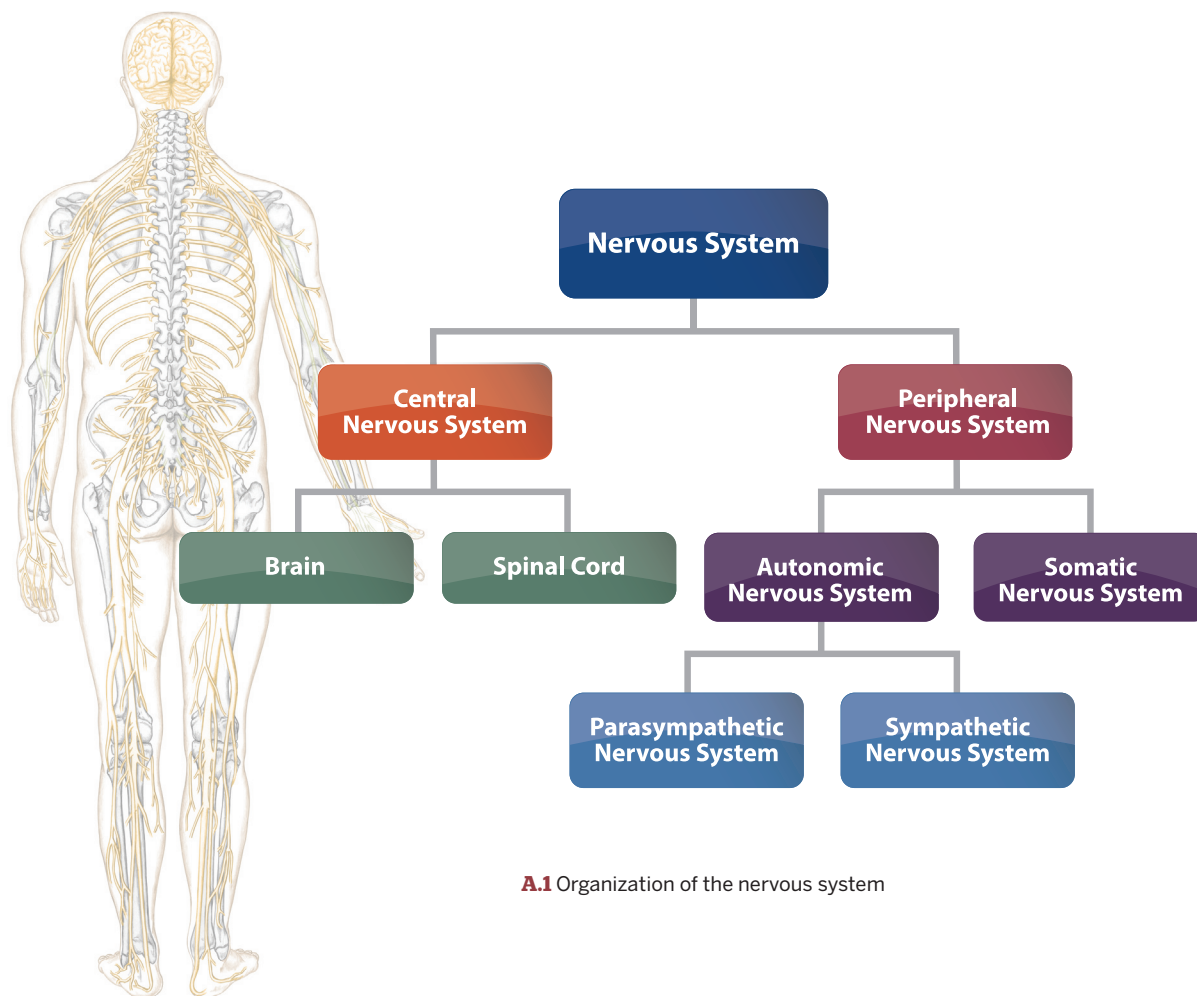


A Day in the Life of Your Nervous System

Trail Guide to the Body focuses on the anatomical and palpatory aspects of the musculoskeletal system, including details to locate (or avoid) nerves. This appendix is designed to help you further explore some

of the fascinating features of the nervous system (A.1). To make it fun, we'll experience it over the course of one day. And it might look a bit like *your* day.



A.1 Organization of the nervous system

An Introduction

It's early. Still dark outside. You roll over, flip on the light next to your bed, and (being a good student) open Trail Guide to the Body to this very page. You blink a few times until these words come into focus. Unbeknownst to you, your nervous system was busy all night regulating hundreds of processes throughout your body—even producing dreams. But now it must perform an astonishingly intricate task—reading.

First, your nervous system needs to recognize squiggly symbols and comprehend their groupings. Then it needs to interpret those figures with previously formed

understandings and memories. Finally, it must formulate new thoughts and images based on those interpretations. How you do all this instantaneously is courtesy of a vast network of neural tissues that comprise your brain, your spinal cord, and thousands of miles of neural pathways.

The nervous system—with your brain serving as the command center—uses electrochemical signals to *send, receive, and relay* messages throughout your body. Doing so, it *coordinates and controls* your thoughts, movements, and automatic responses to everyday life.

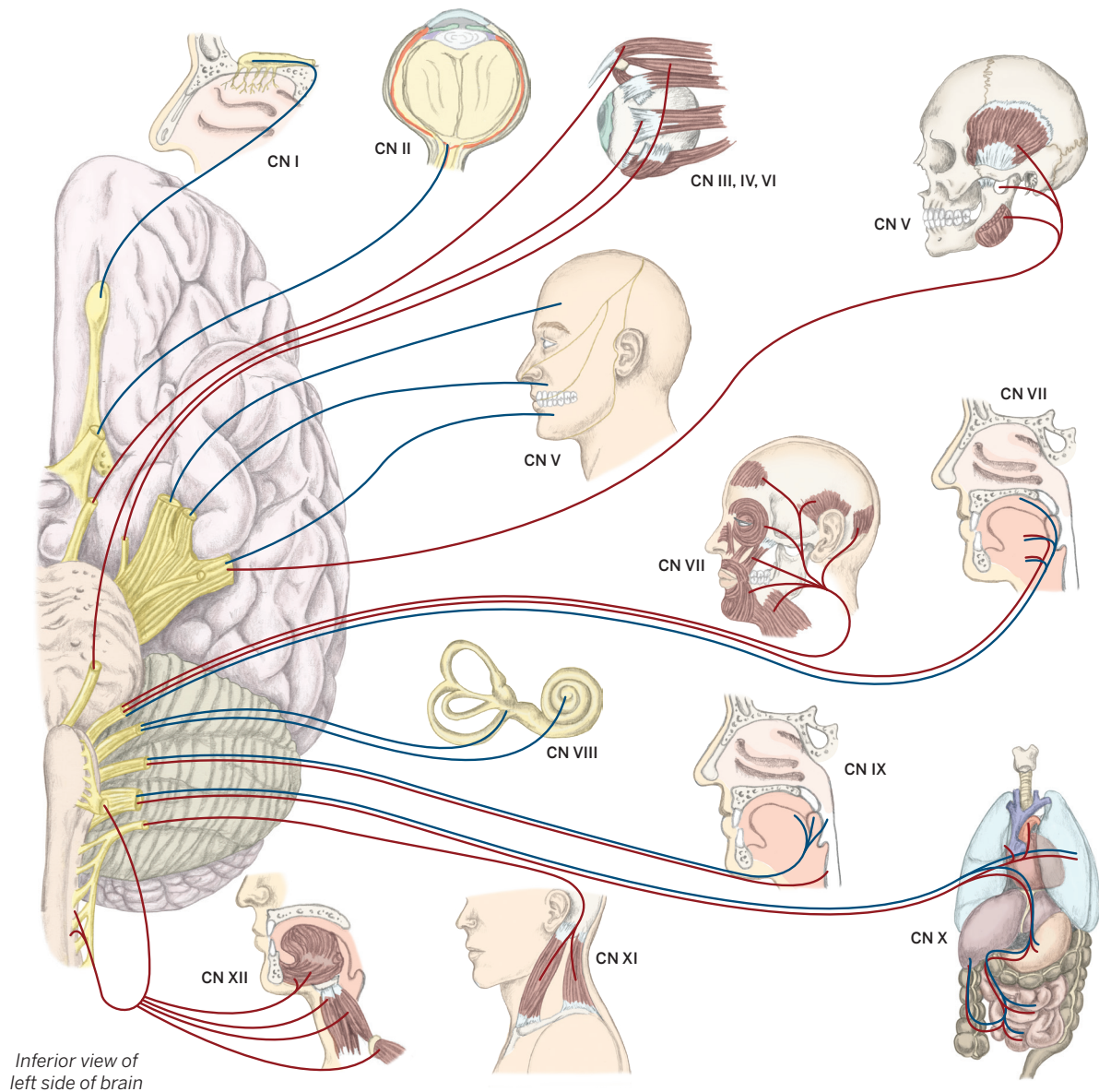
Cranial Nerves and Spinal Nerves

Cranial Nerves

Sitting in class, soaking up all the images and information, your brain is beginning to feel full. Well, it is, but not in the way you might suspect. There are 12 pairs of cranial nerves that extend from the inferior surface of the brain and brainstem. They primarily innervate (supply) structures of the face and head, but they also innervate some structures of the neck and torso. When you blink your eyes, move your tongue,

create a facial expression, smell and taste food, or hear a dog bark, your cranial nerves are chiefly involved (**A.8**).

A pair of cranial nerves is identified by a formal name (such as optic nerve or facial nerve) that relates to its location or function, as well as a Roman numeral (I–XII). Except for the vagus nerve (CN X), each nerve in a pair will exit one side of the brain and function on that corresponding side.



Inferior view of left side of brain

- | | | | |
|---------------|------------------|----------------|-------------------------|
| CN I | Olfactory nerve | CN VII | Facial nerve |
| CN II | Optic nerve | CN VIII | Vestibulocochlear nerve |
| CN III | Oculomotor nerve | CN IX | Glossopharyngeal nerve |
| CN IV | Trochlear nerve | CN X | Vagus nerve |
| CN V | Trigeminal nerve | CN XI | Spinal accessory nerve |
| CN VI | Abducens nerve | CN XII | Hypoglossal nerve |

A.8 Cranial nerves include sensory nerves (blue) and motor nerves (red).