

THE BRAIN

The human brain is a soft, shiny, grayish-white, mushroom-shaped structure encased within the skull. At _____, the typical human brain weighs about 350 to 400 grams. By the time an average person reaches adulthood, the brain weighs about 1.36 kilograms. _____ of greater average body size, the brains of males are generally about 10 percent larger than those of females. Although brain size _____ considerably among humans, there is no link _____ brain size and intelligence.

The human brain is composed of up to one trillion nerve cells. One hundred billion of _____ are neurons, and the remainder are the supporting neuroglia. The brain consists of gray and white matter. Gray matter is nerve tissue in the CNS composed of neuron cell bodies, neuroglia, and unmyelinated axons; white matter is nerve tissue in the CNS composed chiefly of bundles of myelinated axons.

The brain is _____ by the skull and by three membranes called the _____. The outermost membrane is known as the dura matter, the middle as the arachnoid, and the innermost as the pia matter. Many arteries and veins on the _____ of the brain penetrate inward. Glucose, oxygen, and certain ions pass easily from the blood in the brain; _____ substances, such as antibiotics, do not. Scientists believe capillary walls create a blood-brain barrier that protects the brain from a number of biochemicals _____ in the blood.

The parts of the brain can be divided in terms of structure and function. The four principal sections of the human brain are the brain stem, the diencephalon, the cerebrum, and the cerebellum.