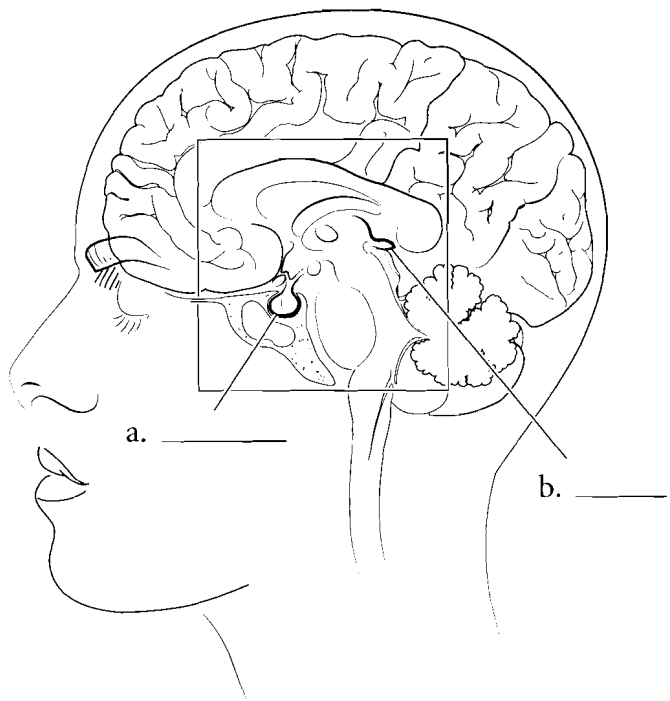
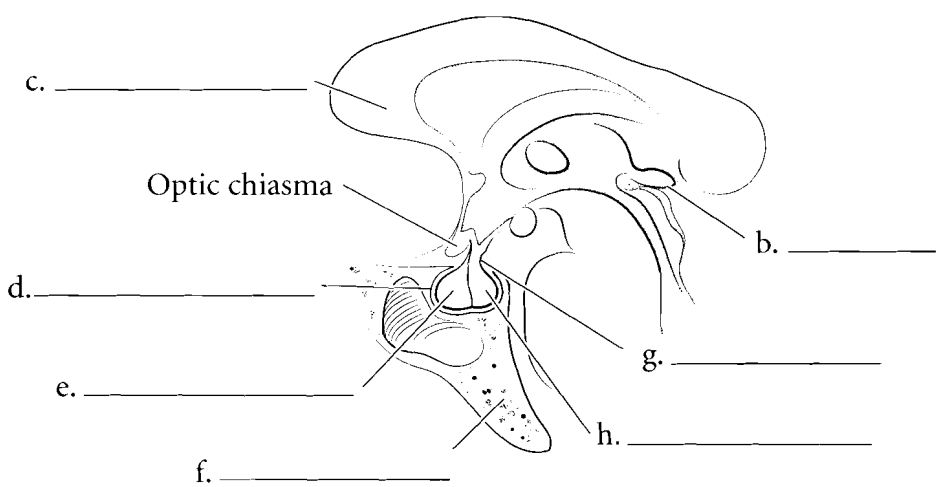
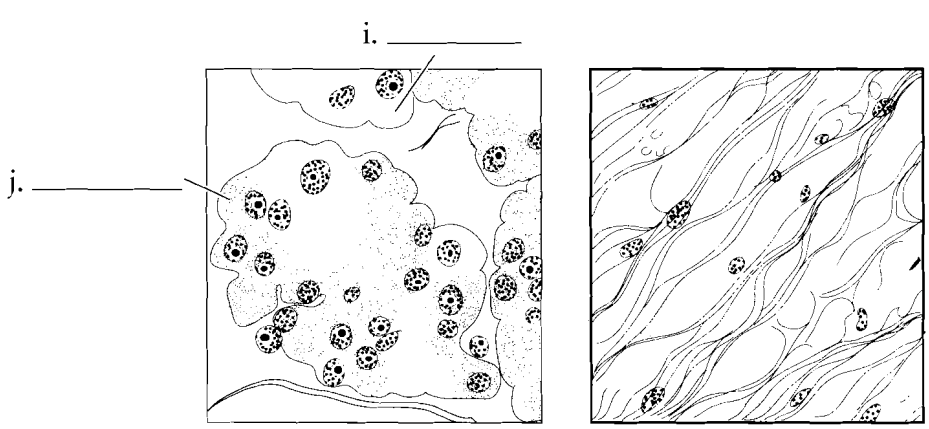
ORGANS OF THE HEAD

The **pineal gland** is a small gland located posterior to the **corpus callosum** in the brain. It has the shape of a pine nut but is a little bit smaller. It secretes the hormone melatonin; melatonin levels increase during the night and decrease during the day.

The **pituitary gland**, or **hypophysis**, is suspended from the brain by a stalk called the **infundibulum**. The pituitary sits in the **hypophyseal fossa** which is a depression in the **sphenoid bone**. The pituitary is a complicated gland that has numerous functions. The **adenohypophysis** or **anterior pituitary** originates from the oral cavity during development and consists of epithelium. It produces several hormones which will be discussed later. The anterior pituitary has cells that pick up histological stain differently. These are **acidophilic cells** and **basophilic cells**. The **neurohypophysis** or **posterior pituitary** is derived from the brain during development and does not make its own hormones but stores hormones produced in the hypothalamus. Label the pineal gland, the corpus callosum, and the pituitary gland and color them in. Label the parts of the pituitary and use different colors for each part.





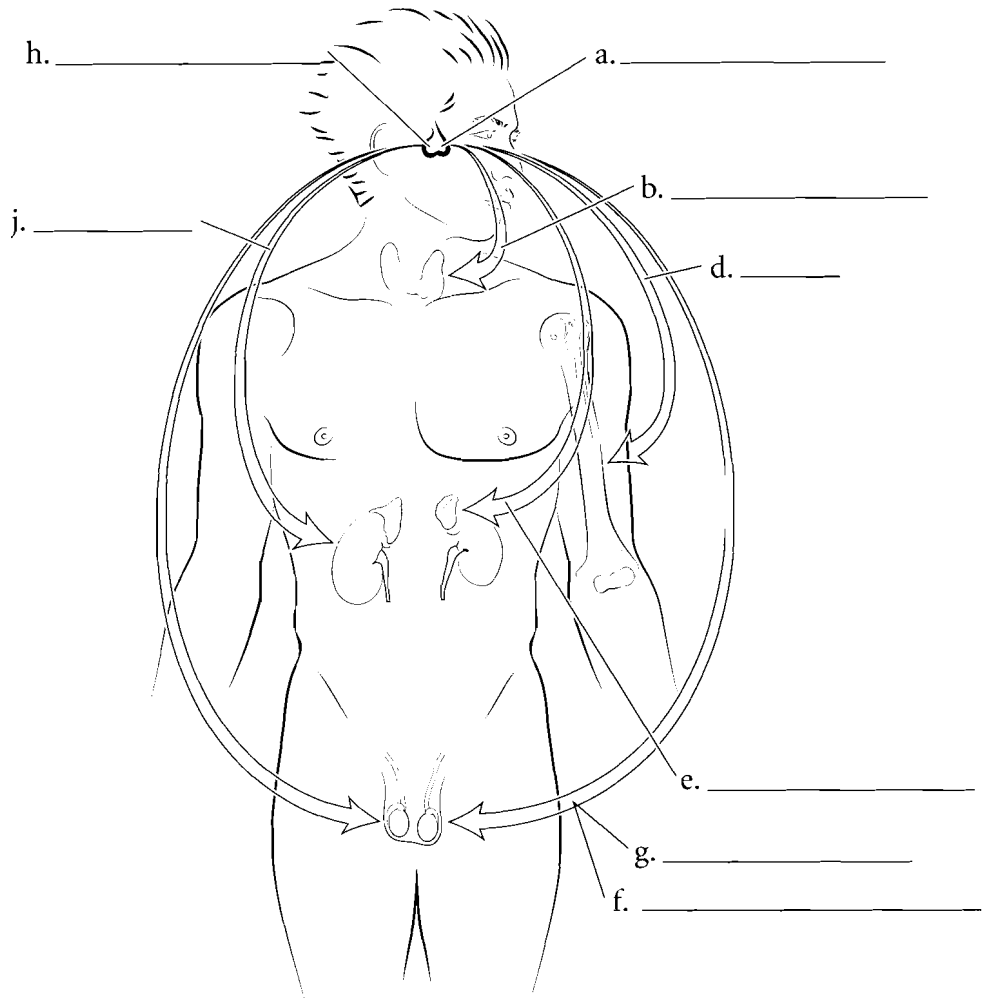


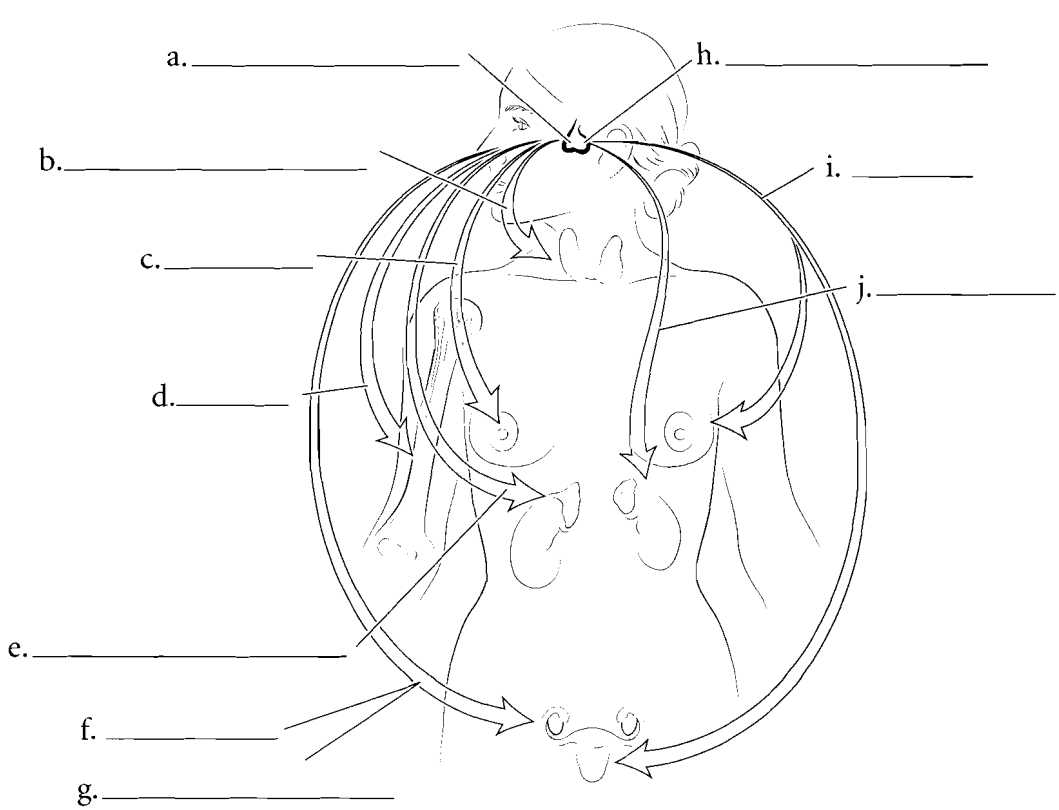
Answer Key: a. Pituitary gland (hypophysis), b. Pineal gland, c. Corpus callosum, d. Hypophyseal fossa, e. Adenohypophysis (anterior pituitary), f. Sphenoid bone, g. Infundibulum, h. Neurohypophysis (posterior pituitary), i. Basophilic cell j. Acidophilic cell

HORMONES SECRETED BY THE PITUITARY AND THEIR TARGET ORGANS

The **adenohypophysis** produces and secretes many hormones that have diverse target areas. **Growth hormone** (**GH**) is released by the pituitary and causes growth and division of cells throughout the body. **Prolactin** is more specific in its function. Prolactin stimulates the mammary glands to become functional in milk production. **Follicle stimulating hormone** (**FSH**) and **luteinizing hormone** (**LH**) are gonadotropins that cause the ovaries and testes to release hormones. **Thyroid stimulating hormone** (**TSH**) causes the thyroid gland to secrete hormones and **adrenocorticotropic hormone** (**ACTH**) has an influence on the adrenal cortex.

The posterior pituitary, or **neurohypophysis**, stores and secretes a hormone called **oxytocin**. This hormone has many functions. It causes milk letdown during nursing and has multiple functions as a neurotransmitter in the brain. It is secreted during orgasm in the female and is also released when the infant is nursing. Oxytocin also has an effect on kidney water balance. The other hormone stored in the neurohypophysis is **antidiuretic hormone** or **ADH**. It is also known as **vasopressin**. It causes absorption of water from the collecting tubules of the kidney decreasing the volume of water in urine.





Answer Key: a. Adenohypophysis, b. Thyroid stimulating hormone, c. Prolactin, d. Growth hormone, e. Adrenocorticotropic hormone, f. Luteinizing hormone, g. Follicle stimulating hormone, h. Neurohypophysis, i. Oxytocin, j. Antidiuretic hormone (vasopressin)