

1.1 Identity: Human Study Guide by Hisrich

1.1.a. In what ways do the parts of a human body **system** work together to carry out a specific function?

1.1.b. In what ways do different human body **systems** work together to complete specific functions?

Urinary (“place for pee”)	kidneys (filter blood & make pee) →	ureters (transport pee) →	bladder (holds pee) →	urethra (releases pee)				
Nervous (“full of nerves”)	Brain (control center)	spinal cord (information highway)	peripheral nerves (carry signals to and from limbs)	eyes, ears, taste buds , etc (collect sensory info and send to brain)				
Immune	thymus promotes production of WBCs	tonsils trap pathogens	appendix stores good bacteria	spleen filters blood	lymph nodes (“water knots”) filter lymph fluid	skin prevents pathogens entering body		
Digestive	teeth/tongue (breaks down and pushes down) →	pharynx (food/air tube) →	esophagus (“eater within”—food tube) →	stomach (breaks down food) →	small intestine (absorbs nutrients) →	large intestine (absorbs water) →	rectum (holds poo) →	anus (releases poo)
	Accessory organs		Gall bladder (stores bile, releases into small intestine)		Liver (makes bile for the small intestine)			
Respiratory	nasal cavity (opening to outside) ↔	pharynx (air & food tube) ↔	larynx (voice box, Adam’s apple) ↔	trachea (“windpipe”—air tube) ↔	epiglottis (“tongue on top”—prevents food entering air tube) ↔	bronchi (branch into lungs) ↔	alveoli (“hollow”—site of gas exchange w/ blood) ←	
Cardio (“heart & little vessels”)	atria (“entrance halls” for blood)	ventricles (“bellies” that pump out blood)	arteries (carry blood away from heart)	arterioles (“little arteries”)	veins (bring blood to heart)	venules (“little veins”)	capillaries (“hair like”—sites of exchange with tissues)	
Endocrine (“secrete within”)	hypo-thalamus (top boss)	pituitary (VP)	pineal gland (sleep/wake cycle)	adrenal (“near kidneys”—fight or flight)	thymus (develops immune)	testes/ovaries (sex hormones)	thyroid (metabolic hormones)	pancreas (insulin)

1.1.c. How can directional terms and regional terms help describe location in the body?

	Anterior ("after")	Front
	Ventral ("belly")	
	Posterior ("after")	Back
	Dorsal ("back")	
	Superior ("above")	Higher
	Inferior ("below")	Lower
	Lateral ("side")	Toward the side
	Medial ("middle")	Toward the middle
	Proximal ("far")	On limb, nearer to attachment point
	Distal ("near")	On limb, farther from attachment point
Superficial ("above")	more external, surface of body	
Deep	more internal	

1.1.d. What features of structure and function are common to all humans?

Humans can be told apart by the <0.1% that is different about us. That's what gives us each our unique **identity**. However, we share most of our features in common. Here are examples.

4 tissue types	Connective, epithelial, muscle & nervous
23 pairs of chromosomes	46 total, 23 from each parent
206 bones at maturity	Roughly → bone number decreases with age (as they fuse)
DNA as identity molecule	Some organisms use RNA, but all humans have DNA
Bipedal	Two legs
Oposable thumbs	Used for grasping
Highly evolved cerebral cortex	Allows for high intelligence
24 ribs, 12 pairs	About 1/20 people have 13 pairs, but 12 is most common
4 chambered heart	Some organisms have 2, 3, or 5 chambers
Lungs dependent on outside pressure	To breath, humans must be at a certain range of pressures
Little body hair	Compared to other primates, humans have very little body hair