# Metabolism

­­­­­­­­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: all the basic processes your body continues to keep you \_\_\_\_\_\_\_\_\_\_\_

Metabolism requires \_\_\_\_\_\_\_\_\_\_ to burn and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ for fuel, to burn it.

Hormones produced in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ system affect your metabolism, energy levels.

Hormones also affect your \_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_, rest, etc.

­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: how quickly your body uses energy

Higher for: rather than

Higher for: rather than

Higher for: rather than

Higher for: rather than

(Higher for larger, more \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: the rate at which your body uses energy while resting

Minimum daily requirements, just to keep body \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Higher or lower based on the same factors as above

A larger person can “\_\_\_\_\_\_\_\_\_\_\_” if their BMR is not met. They will start consuming their own energy stores.

Ingestion/Digestion: provides \_\_\_\_\_\_\_\_\_\_\_\_ (the raw materials) for the body to get energy from

Provides the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ needed for cellular respiration

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ makes energy, or \_\_\_\_\_\_\_\_\_\_\_, using oxygen

Not all foods provide energy for metabolism

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ does not provide energy either, even though it is vital

Some foods go into building the body, repairing \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Some food passes through the body undigested (like \_\_\_\_\_\_\_\_\_\_\_\_\_ )

Some substances are \_\_\_\_\_\_\_\_\_\_\_\_, or waste products (artificial color, flavor, preservatives)

Respiratory system: provides\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ for cellular \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

All \_\_\_\_\_\_\_\_\_\_\_ require oxygen to stay alive, functioning

Burning \_\_\_\_\_\_\_\_\_\_\_\_\_\_ with oxygen creates ATP, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ molecule

* Labs: 23A, 23B (first side)

# Nutrition

Every day, the body needs three basic \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: carbohydrates, fats, and proteins

Carbohydrates are basically \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Complex sugars are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Excess sugar is stored as glycogen in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Stored glycogen may eventually turn to \_\_\_\_\_\_\_, if not used

Sugar levels in the blood are regulated by the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (through insulin)

Basic levels of sugar are required for glucose to power cells.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ include solid fats and liquid oils.

Some fats are very \_\_\_\_\_\_\_\_\_ and very \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_to basic functioning.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ organs by providing liquid-protective barrier

They insulate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (the axons) for speedy processing.

They also store energy for times when food intake is \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Nuts, \_\_\_\_\_\_\_\_\_\_\_\_\_, oils, and some fruits contain good fats.

\_\_\_\_\_\_\_\_\_\_\_\_ fats are unsaturated; \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ fats are saturated.

Proteins are the building blocks of bodily \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Tissues and \_\_\_\_\_\_\_\_\_\_\_\_\_ are made of proteins.

Made of amino acids, the building blocks of \_\_\_\_\_\_\_\_\_ and your body’s instructions.

Proteins are hard to \_\_\_\_\_\_\_\_\_\_, store a lot of energy, will burn \_\_\_\_\_\_\_\_\_\_\_.

Provided primarily by \_\_\_\_\_\_\_\_\_\_\_\_, also nuts, seeds, beans, some vegetables.

Fats, proteins, carbohydrates need to be broken down by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the digestive tract before they can be used. Water, vitamins, and minerals \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Your metabolic rate says how hard it is for the body to do that, to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and derive \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_from the food you eat.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: units of physical energy that your body runs on, provided by food

Food provides macronutrients and energy

The average person needs \_\_\_\_\_\_\_ calories a day—up to \_\_\_\_\_\_\_\_ for an athletic teenage boy!

Taking in fewer calories causes your body to start burning stores of fat, so you get \_\_\_\_\_\_\_\_\_\_\_

Taking in too many calories causes your body to store extra calories as fat, so you get \_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_supply essential organic materials for bodily processes; boosts certain reactions.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ supply needed inorganic materials, especially for bones.

* Labs: 23C, 23H (exercise, first side)
* Vitamin/Mineral Chart: Make chart of Vitamins A, Bs, C, D, E, K, Minerals calcium, phosphorus, magnesium, potassium with Function/Foods I Like

# Drugs

The first category of drugs are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ drugs.

These are any chemical or medicine taken into the body to address \_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_ or

disorder.

Some \_\_\_\_\_\_\_\_\_\_\_\_\_, some \_\_\_\_\_\_\_\_\_\_\_\_, some are preventative.

We usually buy these “over the counter” or get a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from a doctor.

“\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_” (drug store) comes from the Greek word *pharmakon*, for “drug.”

The second category of drugs are abused primarily to affect\_\_\_\_\_\_\_\_\_\_\_\_, and are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ drugs.

They are special kinds of chemicals processed in certain ways.

They are also \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

They generally lead to\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ addiction.

There are several subcategories:

Drugs that slow the central nervous system are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Depressants decrease bodily functions and relax\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

They include: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, sedatives, sleeping pills, tranquilizers.

Alcohol first causes a person to lose the ability to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, think clearly.

It then makes someone unable to form sensible, logical responses, \_\_\_\_\_\_\_\_\_ in the right ways.

It can cause a person to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or lose consciousness.

People die every year from alcohol \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, when the levels in the blood get so

high that they fall into a coma and cannot wake up.

Doctors will \_\_\_\_\_\_\_\_\_\_\_\_\_\_ the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to save someone from any kind of drug

or alcohol poisoning.

Drinking may cause vomiting, headaches, blurred vision; long term \_\_\_\_\_\_\_\_\_\_\_\_\_\_ damage.

Alcohol is illegal under the age of \_\_\_\_.

The legal limit, tested by breathalyzer, is \_\_\_\_\_\_\_\_\_\_\_

Alcohol is involved in more than \_\_\_\_\_\_\_\_\_\_ of traffic-related deaths.

Drugs that increase mental activity and alertness are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

They have an effect like \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, but much stronger.

Stimulants increase bodily functions and stimulate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Stimulants include \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in cigarettes.

Nicotine depresses the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (+ tar); e-cigarettes (vapes) still have nicotine.

Amphetamines, \_\_\_\_\_, speed, cause hyper energy and excitement, increase sensory receptivity.

Also includes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, which is extremely addictive to the body.

Stimulants usually cause a person to lose \_\_\_\_\_\_\_\_\_\_\_\_, sometimes for days, and then crash.

The body becomes even more tired and unresponsive than usual because it is overtired.

Many stimulants also cause \_\_\_\_\_\_\_\_\_\_\_\_\_, panic attacks, headaches, nausea, or dehydration.

Drugs that cause people to see imaginary things are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Cocaine, LSD, marijuana/pot are all hallucinogens.

They stimulate the brain causing \_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_\_ that the body cannot control. Some hallucinations are benign but many people describe negative, tormenting experiences they could not escape—like nightmares that feel real.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are drugs that dull pain and the sensory system.

These are often referred to as “\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_”

Most are highly addictive, even after \_\_\_\_\_ attempt.

They include common \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: morphine, heroin, codeine, oxycodone, and other prescription drugs.

The body can get so addicted that it requires \_\_\_\_\_\_\_\_\_\_\_\_ usage to avoid pain, which then

starts up again when the dosage wears off.

Physical \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ symptoms are extremely strong. People feel sick, shaky, chills, flu, and have indigestion, anxiety, loss of control, even intense cramping or shock-like pain waves.

An addiction has two parts which often have to be treated separately: the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ addiction in the body, and the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_addiction in the mind.

* Lab 23D

# Disease

Your \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ works all the time to keep you well.

The immune system produces \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ which kill many pathogens.

It also fights bacteria and viruses \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_, mucous membranes, and stomach \_\_\_\_\_\_\_\_\_\_\_ take care of a lot of problems.

The body naturally produces blood, lymph, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, fever in response to attack.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are in the air, on surfaces, in liquids, in raw foods, and on people/animals.

Many substances contain \_\_\_\_\_\_\_\_\_\_\_\_\_ which poison the body.

Bacteria grow \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and in warm, moist conditions.

Most infections are due to bacteria, and medical treatment requires \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to

inhibit the growth of that bacteria.

Fungal infections require \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, not antibiotics.

Viruses are small strands of harmful \_\_\_\_\_\_\_or \_\_\_\_\_\_\_\_\_ that attacks a certain kind of cell (i.e.

respiratory tract cells) and use cells to house/reproduce themselves

Most viruses cannot be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, although some antivirals make them easier to handle.

Some vaccines \_\_\_\_\_\_\_\_\_\_\_\_\_\_ viruses (chicken pox, flu vaccine, measles/mumps/rubella, polio, rabies)

Common colds and flus are all viruses; you become immune but they \_\_\_\_\_\_\_\_\_\_\_\_\_ quickly and easily,

changing their outside coatings so your white blood cells don’t \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ them.

Infections cause fever, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_ damage. They can be viral or bacterial.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: when water, air, or soil is polluted with chemicals or pathogens

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ infection: caused by coming into direct physical contact with a surface or

substance; is prevented by using gloves, washing hands, sterilizing tools

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ infection: caused by breathing in germs. Prevented by using masks,

filtration systems, covering cough or sneezes.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_ infection: prevented by cleaning wounds carefully so that bacteria in them do not grow. Bacteria can be introduced from outside the body (mud, gravel, wood) or can occur during surgery from tools, doctors, infected substances.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_-carried infections are carried by hosts like insects or wild animals: rabies, malaria, Lyme disease.

* Lab 23E