Systematic Classification of Contemporary Humans

Galactic development ~13 787 Mya
Cosmic
Spacetime
Energy
Matter

~13 600 Mya
Chemical
Stars
Heavy elements
Chemical diversity

Origin of Life on Earth

Hadean ~4 540 Mya
Terrestrial
Earth
Atmosphere
Oceans

Archean ~4 000 Mya
Organic
Carbon-based molecules
Complex structures
Amino acids
Sugars
Nucleotides
Hydrothermal vent mediation
Polymerization
RNA
Peptides
Lipid membranes

~3 800 Mya
Prebiota
Ribozymes
Self-replicatiion
Evolution by natural selection
Proteins
Enzymes
Metabolic pathways
Protocells

Viruses

Single-celled life

~3 500 Mya
Biota (Life)
Self-maintenance
DNA
Self-reproduction
Cellular structure
Last Universal Common Ancestor (LUCA)

Archaea, Bacteria

Proterozoic ~1 650 Mya
Domain **Eukaryota**
Membrane-bound organelles
Cell nucleus
Linear DNA
Sexual reproduction
Complex cytoskeleton

Plants, Algae

~1 500 Mya
Amorphea
Amoeboid locomotion
Heterotrophy

Amoeba

~1 100 Mya
Obazoa
Feeding groove
Flagellar structures
Signaling and regulatory pathways

Breviatea

~1 100 Mya
Opisthokonta
Single posterior flagellum

Fungi

~1 000 Mya
Holozoa
Food ingestion
Internal digestion
Cell differentiation

Teretospores

~760 Mya
Filozoa
Filose tentacles for
Sensory perception,
Feeding,
Locomotion and
Adherance

Filasteres

Multicellularity

~670 Mya
Choanozoa
Intercellular communication
Intercellular cooperation

Choanoflagellates

~665 Mya
Kingdom **Metazoa** (Animals)
Multicellularity
Specialized tissues
Internal digestive system
Locomotion
Diplontic lifecycle
Embryonic development

Sponges

Soft-bodied animals

~635 Mya
Eumetazoa (True animals)
Truly differentiated tissues
Symmetry
Mouth
Anus

Comb jellies

~580 Mya
ParaHoxozoa
Anterior-posterior patterning
Distinct body regions

Placozoa

~575 Mya
Planulozoa
Larval stage
Gastrulation via Invagination

Jellyfish, Corals

~567 Mya
Bilateria
Bilateral symmetry
Head
Three germ layers
Nervous system
Muscles
Digestive tract
Light-sensitive cells
Structured sleep patterns

Xenacoelomorpha

~558 Mya
Nephrozoa
Coelom
Excretory organ system

Flatworms, Nematodes,
Arthropods, Mollusks, Octopuses

Cambrian explosion

Cambrian ~538 Mya
Deuterostomia
Grows from anus to mouth
Mineralized body parts

Starfish, Sea urchins

~525 Mya
Phylum **Chordata**
Pharyngeal arches
Notochord
Dorsal hollow nerve cord
Post-anal tail
Thyroid
Eyespots
Cardiac structures

Lancelets

~518 Mya
Olfactores
Olfactory system

Tunicates

Vertebrates

~518 Mya
Vertebrata
Vertebral column
Skull
Nostrils
Paired eyes
Circulatory system
Muscular heart

Lampreys, Hagfishes

Ordovician ~439 Mya
Gnathostomata (Jawed vertebrates)
Jaws
Teeth
Paired limbs
Lens-equipped eyes

Sharks, Rays

Silurian ~425 Mya
Osteichthyes (Bony fish)
Bony endoskeleton
Lungs or swim bladder
Shoulders

Ray-finned fish

~425 Mya
Sarcopterygii (Lobe-finned fish)
Lobed fins
Divided atrium

Coelacanths

Devonian ~416 Mya
Rhipidistia
Limbs supported by bones

Lungfishes

Conquering land

~409 Mya
Tetrapodomorpha
Weight supporting limbs
Pelvic girdle

~409 Mya
Choanata
Air-breathing lungs
Internal nostrils
Nasal passage

~385 Mya
Elpistostegalia
Shoulder girdle
Neck
Loss of dorsal and anal fins

~375 Mya
Stegocephalia
Strong vertebral column
Complex teeth structures

Carboniferous ~365 Mya
Tetrapoda
Four fully functional limbs
Digits
Terrestrial locomotion
Complex respiratory system

Amphibians

~350 Mya
Reptiliomorpha
Keratinized skin and claws
Internal fertilization

~320 Mya
Amniota
Amniotic egg
Land-based

Reptiles (including Birds),
Turtles, Tortoises

Mammalian characteristics

~318 Mya
Synapsida
Singular temporal fenestra
Thermal regulation

~308 Mya
Eupelycosauria
Differentiated teeth
Primitive canines

~304 Mya
Sphenacodontia
Articulated jaw
Canines

Permian ~280 Mya
Therapsida
Warm-blooded
Vertical limb posture

~266 Mya
Theriodontia
Flexible spine
Mammalian locomotion
Seven neck vertebrae

~260 Mya
Cynodontia
Secondary palate
Proto-hair
Single lower jawbone
Middle ear bones
Heel
Diaphragm

Triassic ~235 Mya
Probainognathia
Incisors
High metabolic rate
Mammalian gait

~233 Mya
Prozostrodontia
Upright running
Mammalian jaw

~227 Mya
Mammaliaformes
Molars
Hair

Jurassic ~200 Mya
Class **Mammalia**
No teeth at birth
Mammary glands
Fur
Three inner ear bones

Platypuses, Echidnas

Placenta & Pregnancy

~170 Mya
Theriiformes
Separate anus and urogenital tract
External ear

~168 Mya
Trechnotheria
Radial articulation of limbs
Ankle
Two sets of teeth

~165 Mya
Cladotheria
Sensory capabilities:
Hearing, Smell, Touch

~155 Mya
Zatheria
Nipples

Cretaceous ~140 Mya
Tribosphenida
Tribosphenic molars
Modern ear

~120 Mya
Theria
Live birth

Marsupials

~110 Mya
Eutheria (Placental mammals)
Placenta

Mammalian diversity

~100 Mya
Placentalia
Extended gestation

Armadillos, Sloths, Anteaters, Aardvarks,
Elephant shrews, Elephants, Manatees

~95 Mya
Boreoeutheria
External scrotum

Hedgehogs, Shrews, Moles,
Ungulates, Whales, Pangolins, Carnivorans

~90 Mya
Euarchontoglires
Omnivory
Diverse ecological niches

Rodents, Rabbits, Hares, Pikas

~85 Mya
Euarchonta
Hand-eye coordination
Symbiosis with seeds and berries

Treeshrews

Paleogene ~66 Mya
Primatomorpha
Forward-facing eyes
Binocular depth perception
Grasping hands and feet

Colugos

Humanoid form

~65.9 Mya
Order **Primata** (Monkeys)
Opposable thumbs
Nails instead of claws
Larger brain-to-body ratio
Flexible shoulders
Extended parental care
Complex social structures

Lemurs

~60 Mya
Haplorhini (Dry-nosed monkeys)
Dry nose
Reduced olfactory capabilities
Vision as primary sense
Group behavior

Tarsiers

~40 Mya
Simiiformes (Simians)
Loss of sensory whiskers
Two pectoral nipples
Naked pendulous penis
Vocalizations

New world monkeys

~30 Mya
Catarrhini (Old world monkeys)
Trichromatic vision
Reduced tail
Downward-facing nostrils
2.1.2.3 dental formula
Flattened nails

Baboons, Macaques, Mandrills

Cognition & Awareness

Neogene ~23 Mya
Family **Hominoidea** (Apes)
Advanced problem-solving
Prolonged maternal care
Learning by observation
Tendency toward bipedalism
Flexible shoulder joints

Gibbons

~17 Mya
Hominidae (Great apes)
Human-like teeth and ears
Primitive tool use
Recognizes their own reflection
Self-awareness
Empathy
Deliberate deception
Mourning
Fingerprints

Orangutans

~12.5 Mya
Homininae
Family structure
Facial expressions
Emotions

Gorillas

~7.5 Mya
Homonini
Loss of penile bone
Inter-group conflicts
Culture

Bonobos, Chimpanzees

~6.1 Mya
Australopithecines
Bipedal locomotion
Human-like limb proportions
Flexible fingers
Thicker enamel

~4.5 Mya
Australopithecus
Efficient walking
Smaller canines
Reduced prognathism
Varied diet
Diverse habitats

~2.8 Mya
Genus ***Homo*** (Human)
Stone tool making
Meat consumption
Social complexity
Division of labor

Pleistocene ~2 Mya
Homo erectus
Loss of body hair
Complex cognition
Passing on knowledge
Technological development
Hunter-gatherer
Food processing
Controlled fire
Roasting, Grilling, Smoking

~700 kya
Homo heidelbergensis
Spear
Shelter construction
Complex communication

Humanity

~310 kya
Species ***Homo sapiens*** (Modern human)
Perennially enlarged breasts
Advanced language
Social learning
Clothing
Human migration
Behavioral modernity
Spiritualism
Art
Fishing
Trade
Weaving
Ceramics
Bow and Arrow
Bread

Neolithic ~12.7 kya
Civilized
Settlements
Agriculture
Grindstones
Pottery
Domestication of animals
Fermentation
Metalworking
Wheel

~5.2 kya
Historic
Writing
Copper smelting
Calendar
Formal education
Bronze smelting
Law
Governance
Literature
Sail
Architecture
Mathematics
Alphabet
Medicine
Philosophy
Currency
Engineering
Compass
Gunpowder
Printing press
Scientific revolution
Enlightenment
Industrialization

Copper age
Bronze age
Antiquity
Medieval
Modern

~70 ya
Contemporary (You are here)
Space exploration
Globalization
Digitization
Anthropogenic climate change

Compiled by Anthony Liekens, January 2025