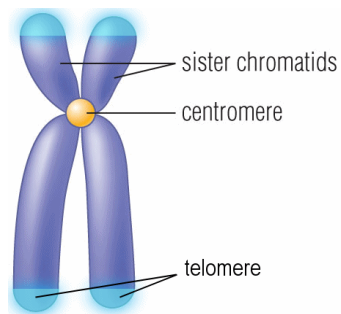


Do you believe that God scooped up a pile of dirt, breathed life into it, and created man? Do you reject the idea that lifeforms change over time, that the lifeforms that are best accustomed for their environment survive, and that gradual change in part of a population is the reason we have so many different species on Earth?

Ultimately, you will choose to believe what makes the most sense to you, and we at Inland Empire Atheists & Agnostics respect that. However, there is a tremendous amount of misinformation and ignorance out there about the theory of evolution. We hope this pamphlet teaches you what so many people find convincing about evolution.

### The Ugly Chromosome

Every living thing has DNA, which coils up to form chromosomes. A chromosome looks like an X and is actually two straight chromatids connected by a coupler known as a centromere. Like a barcode, chromatids have markers called telomeres at the ends that say "I am the beginning of the DNA" and "I am the end of the DNA". Sounds very orderly, doesn't it? Almost like it might have been.... designed! \*gasp\* But not so fast.



All great apes have 24 pairs of chromosomes. Humans have 23 pairs. But upon closer inspection, something is strange about human chromosome #2. It's almost twice as long as the other chromosomes,

it has telomeres in the middle of the chromatids, and there are two centromeres! Evolutionists suspect that at some point during our evolution, two chromosomes got tangled together and started replicating themselves that way. To this day, all humans (even you) have this funky chromosome that looks like two fused chromosomes. The top half looks like chimpanzee chromosome 2q, while the bottom looks like chimp chromosome 2p.

*human chromosome 2 evolution*



### Going Viral

Did you know that there are some viruses that sign their name when they invade your cells? Rather than spend their days replicating themselves, lazy Retroviruses insert a copy of themselves into your DNA. When your own cell copies your DNA, the virus is copied as well! If the virus invades your egg or sperm cells, and you make a baby, your descendants will have that virus living in every cell! Don't worry, though, most of the time it's harmless, the virus just wants to be duplicated, he doesn't want to cause you any harm. However, it's estimated that 8% of your DNA comes from viruses.

We can look at human DNA and Ape DNA, and we find that we have some of the same viral DNA in the same places. Evolutionists suspect that a long time ago, primates got infected with these viruses, and all of their offspring carry the virus in their DNA. This means that both humans and apes are descendants of these primates.

*endogenous retrovirus evolution*



### Radioactive dating

Imagine you are a scientist. You go out and pick some sunflowers, some tomatoes, and some pinecones, and measure their radioactivity with special equipment in your lab. You measure 100 units of radiation from each

plant. 5000 years later, you pick some sunflowers, some tomatoes, and some pinecones, and measure their radioactivity as well as the radioactivity of your 5000 year old samples. You find that the new samples emit 100 units, while the 5000 year old samples emit 50 units. Another 5000 years passes. You find that new plants once again emit 100 units, while the 5000 year old plants emit 50 units, and the original samples emit 25 units. I now hand you a pinecone and I tell you I need to know how long ago it fell off the tree. How would you be able to tell? If you said "measure the radiation", pat yourself on the back! That is how carbon dating came about. If the pinecone emitted 50 units of radiation, how old would it be?

If you said "wait a minute, radioactive dating wasn't around 5000 years ago, so how can you be sure it's accurate over such long periods?" give yourself a pat on the back! You're being skeptical, and we always applaud skepticism at CSUSB SSA. Radioactive dating has been used on old trees, thousands of years old. Trees get a new ring every year that they're alive, which allows scientists to test trees whose age is already known. By using this method, they've determined that radioactive dating is usually accurate to within about 40 years.

Carbon dating assumes that the ratio of radioactive carbon to normal carbon has been about the same for 50,000 years. If you're thinking "what if the ratio hasn't been the same?" pat yourself on the back! Now, you're thinking like a skeptic- questioning and challenging things other people expect you to just accept because they said so.

Critics have wondered what affect the industrial revolution, atomic bomb testing, and even The Great Flood have had on radioactive carbon

levels in the atmosphere. Keep in mind though, these events only affect organisms that lived during that time. Scientists acknowledge anomalies and inaccuracies exist, and are trying to make radioactive dating more reliable and more accurate. Inaccuracies remain the exception, however, not the rule.

carbon 14 dating

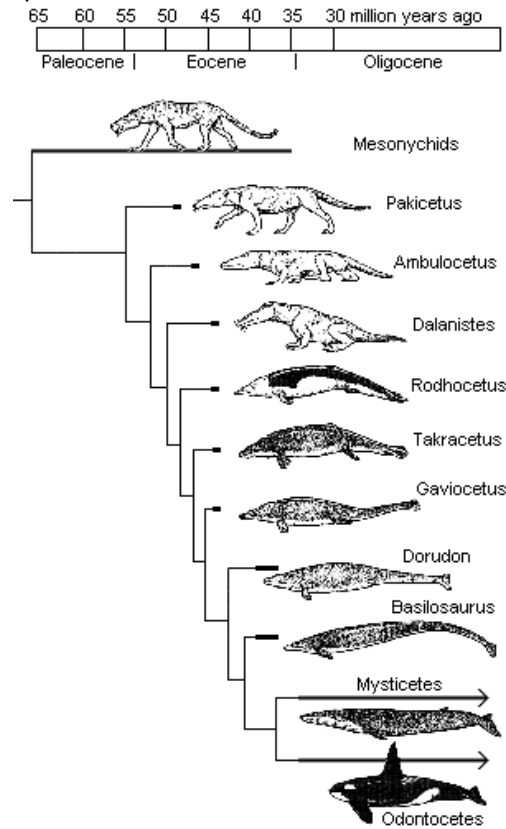
### Transitional Fossils

The "ringer" in the creationist's tool chest is the question: "Why aren't there any transitional fossils?" The truth Ray Comfort doesn't want you to know, however, is that there are thousands of transitional fossils. There are fossils of dinosaurs with feathers, hollow bones, and bird-like feet because dinosaurs evolved into birds. There are fossils of fish with crocodile-like heads that were probably useful as they spent more and more time in shallow water and, eventually, land. There are fossils of early humans that have short legs and are hunched over like apes.

Some of the "transitional forms" are still alive today. Did you know that the Daddy long legs living behind your entertainment center isn't a spider? Spiders have 8 eyes, 8 legs, and two body segments. Daddy long legs have 8 legs, but only 2 eyes and one big body segment. The Daddy long legs is the descendent of an old animal that lived long ago. The spider is a descendent of this same animal, but it has undergone mutations that make it look much different than its ancestor, which probably looked much closer to daddy long legs.

However, the "ringer" for evolutionists is a remarkably complete fossil record of the whale's evolution from a land mammal known as *Pakicetus*. Similar skeletons, breathing systems, and inner ears prove to all but the most stubborn creationist that whales evolved from this

carnivorous land mammal. The fossil record does not disprove Creation, but Creationists will have to come up with something better than an incomplete fossil record to undermine evolution. Transitional forms exist, and they are plentiful.



*\*From "Evolution: The Triumph of an Idea" by Carl Zimmer*

If you're still skeptical about evolution, that's fine. If the evidence hasn't convinced you, that's fine. But ask yourself, why don't I apply this same skepticism to things my pastor is telling me? Why is religion always the last to jump onboard new scientific ideas? If God is really guiding religious leaders toward the truth, why were they the last to realize that the Earth was round? Why were they the last to admit that the Earth rotates around the Sun? And if they were wrong about those things, why couldn't they be wrong about evolution?

[www.InlandEmpireAtheists.com](http://www.InlandEmpireAtheists.com)

# Evidence for Evolution



Food For Thought From Your Friendly Neighborhood Atheists

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