

# Smoky Mountain Bible Institute

## Biology Thermodynamics 103

Welcome back to the lab – put on your lab coat, take a seat and get comfortable. We are going to talk about biology and to do this, we will discuss thermodynamics today.

What is thermodynamics and what does it have to do with biology? Well, all living things convert matter into energy to survive, and the concept of thermodynamics is about that very process. The science of energy conversion involving heat and other forms of energy is typically used in the study of machines. However, studies on the relations and interactions between variables, such as temperature, volume, and pressure, can also be used when discussing how living things convert matter (food) into energy.

The principle of thermodynamics that is most intriguing for this discussion is its second law. To understand this law, we must first define *entropy* which is in essence the observed universal process of decay, or the idea that over time, things break down. So, the Second Law of Thermodynamics declares that isolated systems will eventually achieve equilibrium, or break down to their base elements until there is not enough heat or energy to continue the process. This explains what we observe in all of nature: simply stated—the process of transitioning matter to energy and vice versa causes a loss of heat energy. Over time these heat transfers become decreasingly efficient to the point that they theoretically come to a complete stop. I say theoretically because while we have a measurement for absolute zero, 0°K on the Kelvin scale, -273.15°C or -459.67°F, we have not yet been able to observe that temperature, although I hear we have come very close.

What has any of this got to do with biology? Well, on the surface it appears that life runs counter to this law that over time, things break down. But on closer examination, this is not the case. Even at the point of conception, we all have genetic clocks within our DNA called telomerase that limit how long we can continue to reproduce healthy cells. Telomerase and ultraviolet rays are the two main causes of human aging. So, while all life has a period of growth and regeneration—still, over time, every living thing dies. This is important for three reasons.

1. **Gen 3:19b ... “for you are dust, and to dust you shall return.”** All life on earth must obey this law of thermodynamics because it is part of the curse that sin brought into the world.

2. **Gen 6:3 Then the Lord said, “My Spirit shall not abide in man forever, for he is flesh: his days shall be 120 years.”** There is debate over the meaning of this text, but I am among those who hold that human life was limited to 120 years by God after the flood some 4300 years ago, and if we examine the genealogies from Noah—in only 8 to 12 generations, human life spans are at or below 120 years. (I must note that I am in a very small minority in this opinion)

3. Molecules-to-man evolution holds to a position that over time, simple life develops into complex life. This is not observed anywhere in the biological or fossil record. There is not one scientific example of a "transitional specie" because none exists. If you research transitional species, you will find long lists of related species, but, each falls within a created kind. My bias allows me to see this as evidence of a common Creator who put within each created kind amazing diversity that is often triggered by genetic adaptation to the environment. For example, all dogs are descendants of one proto dog kind and genetic evidence bears this out. Our evolutionary friends have no bias.... how nice for them. ;-)

I have often shared with many of you that I am a young earth creationist, and as such, believe the universe to be just a little over 6000 years old, give or take a few years, or even a century or two based on the possibility of cumulative genealogical overlap. Because of this, I assert that the idea of tens of thousands of years is incorrect. However, I can legitimately debate with like-minded creationists who hold to slightly older ages in the tens of thousands of years range.

However, I feel the position that the world is 4.7 billion years old and that the universe is over 13 billion years old or that millions of years is even a possibility, is a position of faith with little or no basis in observable or verifiable empirical data. We will have to give time to the topic of time in our next lesson. We will talk about dating methods: C14, radiometric, and isochron dating methods. Have a blessed day and take time to enjoy the beauty of God’s amazingly complex biological creation.