

## The Amazing Regenerating Rib

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Georgia Purdom, Ph.D., Answers in Genesis

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The skeletal system is one of the most underappreciated organ systems in our bodies. Bones are usually considered rather static and not to contribute much to overall health. However, bones are some of the most dynamic organs in the body and constantly change to help the body deal with the stresses (nutritional and physical) that are encountered. Ribs are truly amazing bones not only for the physical roles they play in our bodies, but also for their connection to Genesis.

### Anatomy and Physiology of Ribs

Both men and women have 12 pairs of ribs.<sup>1</sup> These ribs extend from the vertebrae to form the wall of the thoracic cavity (where the lungs and heart reside). The first seven pairs of ribs are called true ribs and connect to the sternum. The remaining five pairs of ribs are called false ribs because they don't attach directly to the sternum. Ribs 8–10 attach to cartilage that attaches the true ribs to the sternum, and ribs 11–12 are floating—they do not attach to the sternum or other ribs.

The function of ribs is threefold. First, they provide protection for the lungs and heart. The ribs more or less form a “cage” around these very important organs. Second, they are one of the few bones that continue to make red marrow (and thus blood cells) in the adult. Third, they serve as attachment points for chest muscles involved in respiration.

The rib cage can be thought of as a handle on a bucket. When we breathe in, the muscles attached to the ribs pull the ribs out just as when you lift the handle on a bucket from the side—it goes out and up. The lungs are coordinated with this movement, expand and take air in. The opposite occurs when we breathe out; the muscles attached to the ribs relax, and the ribs go down and in (just like dropping a bucket handle)—and the lungs follow (become smaller) causing air to leave.

The absence of this latter function was known by our Savior during His crucifixion on the cross. In crucifixion the arms are stretched to the extent that the chest muscles connecting to the ribs are pulled tight. A person enduring crucifixion can breathe in, but they have a difficult time breathing out. The ribs remain in a fixed position because the muscles attached to the ribs can't relax. Thus, the lungs can't become smaller, which is necessary for air to leave.

Jesus would have had to lift Himself up (scraping a severely beaten back on the wooden cross) to allow the chest muscles to relax and the rib cage to move so He could breathe out. To think that He did this successfully for several hours and managed to say seven phrases during that time period should make us appreciate even more His sacrifice for us.

### Regenerating Ribs

Although all bones can repair themselves, ribs can regenerate themselves.<sup>2</sup> Ribs are commonly removed during surgeries that require bone grafts in other parts of the body. The rib is removed from the periosteum (a tissue surrounding the bone) much like a banana would be removed from its peel while keeping most of the peel intact. The periosteum must remain, as it contains osteoblasts which build the new rib bone.

### Ribs and Genesis

The rib bone is one of the few bones mentioned by name in Scripture. Genesis 2:20b–22 states,

But for Adam there was not found a helper comparable to him. And the LORD God caused a deep sleep to fall on Adam, and he slept; and He took one of his ribs, and closed up the flesh in its place. Then the rib which the LORD God had taken from man He made into a woman, and He brought her to the man.

Being a woman this is an especially important part of Scripture to me!

Some people have mistakenly thought that because God used a rib from Adam to make the woman that all men have one less rib than women.<sup>3</sup> We know this is false because we can easily count the number of ribs in men and women and see they are the same. The number of ribs is determined by the code written in our DNA.

God did not change Adam's DNA; He simply removed one of his ribs to use for the creation of the woman. Thus, all men descended from Adam (and Eve) would have 12 pairs of ribs, even if Adam had one less rib. The same could be said for a man who loses his leg due to an accident. Would all his children only have one leg? Of course not—the man's DNA that codes for two legs has not changed.

God chose from Adam the one bone that could regenerate itself. So, even though he likely had one less rib bone for some period of time (possibly to some an indication of imperfection before the Fall), we still observe perfection and completeness in Adam physically before the Fall due to the regenerative capability of the ribs.

As a woman I find it compelling that God chose to remove a bone from Adam's side versus from his head or his feet to create the woman. Matthew Henry states, "That the woman was made of a rib out of the side of Adam; not made out of his head to rule over him, nor out of his feet to be trampled upon by him, but out of his side to be equal with him, under his arm to be protected, and near his heart to be beloved."<sup>4</sup>

God made the woman to be Adam's helper, "And the LORD God said, 'It is not good that man should be alone; I will make him a helper comparable to him.'" (Genesis 2:18). God instituted different roles for husbands and wives from Creation, but they were adversely affected by the Fall (Genesis 3:16). However, the Fall did not change the fact that God made the woman (and thus all women) equal in status to Adam (and thus all men).<sup>5</sup>

### Footnotes

1. Men and women can have supernumerary ribs, but this is rare.
2. Moore, K.L., and A. F. Dalley, 1999. *Clinically oriented anatomy*, 4th ed, p.64. Philadelphia: Lippincott Williams & Wilkins.
3. The woman was not named Eve until after the Fall (Genesis 3:20).
4. Henry, M. *Matthew Henry's commentary on the whole Bible*. Vol. I (Genesis to Deuteronomy), Notes on Genesis 3:21–25. Retrieved from, [http://www.ccel.org/ccel/henry/mhcl.i\\_2.iii.html](http://www.ccel.org/ccel/henry/mhcl.i_2.iii.html).
5. Although husbands and wives have different roles (Ephesians 5:22–33), they are equal in status before God.