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# What God Meant for Good

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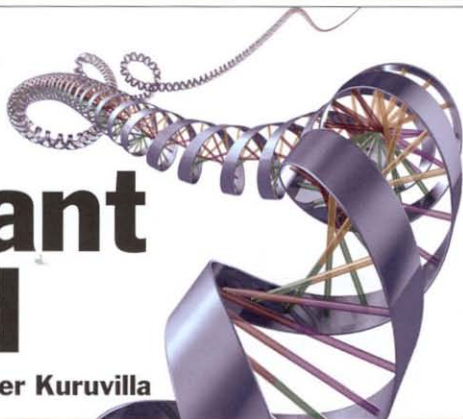
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# What God Meant for Good

by Dr. Heather Kuruvilla



Although the body's cells may go tragically awry, they tell the story of Creation, the Fall, and future redemption.

**C**ancer. Few of us have not been touched by its horror. It strikes without mercy, prematurely separating us from loved ones and leaving a swath of pain and grief behind. We fight back as best we can, but our arsenal of toxins and radiation are often vain attempts that leave us wondering if the cure is worse than the disease.

As a cell biologist, I am inundated with information about cancer. Discoveries of cellular pathways impact our understanding of the disease, and every new finding expands our knowledge of how cells should behave. Cancer offers an excellent example of what happens when a created system ceases to function in accordance with its good design. As a Christian who believes the literal Genesis account, I am overwhelmed with the themes of Creation and the Fall as I learn more about cancer. In it I see a living parable.

## The Perfection of God's Design

Scripture tells us God's original creation was very good and He was pleased with it. And despite the effects of the curse on the world, created things continue to bring pleasure to their Creator. Psalmists

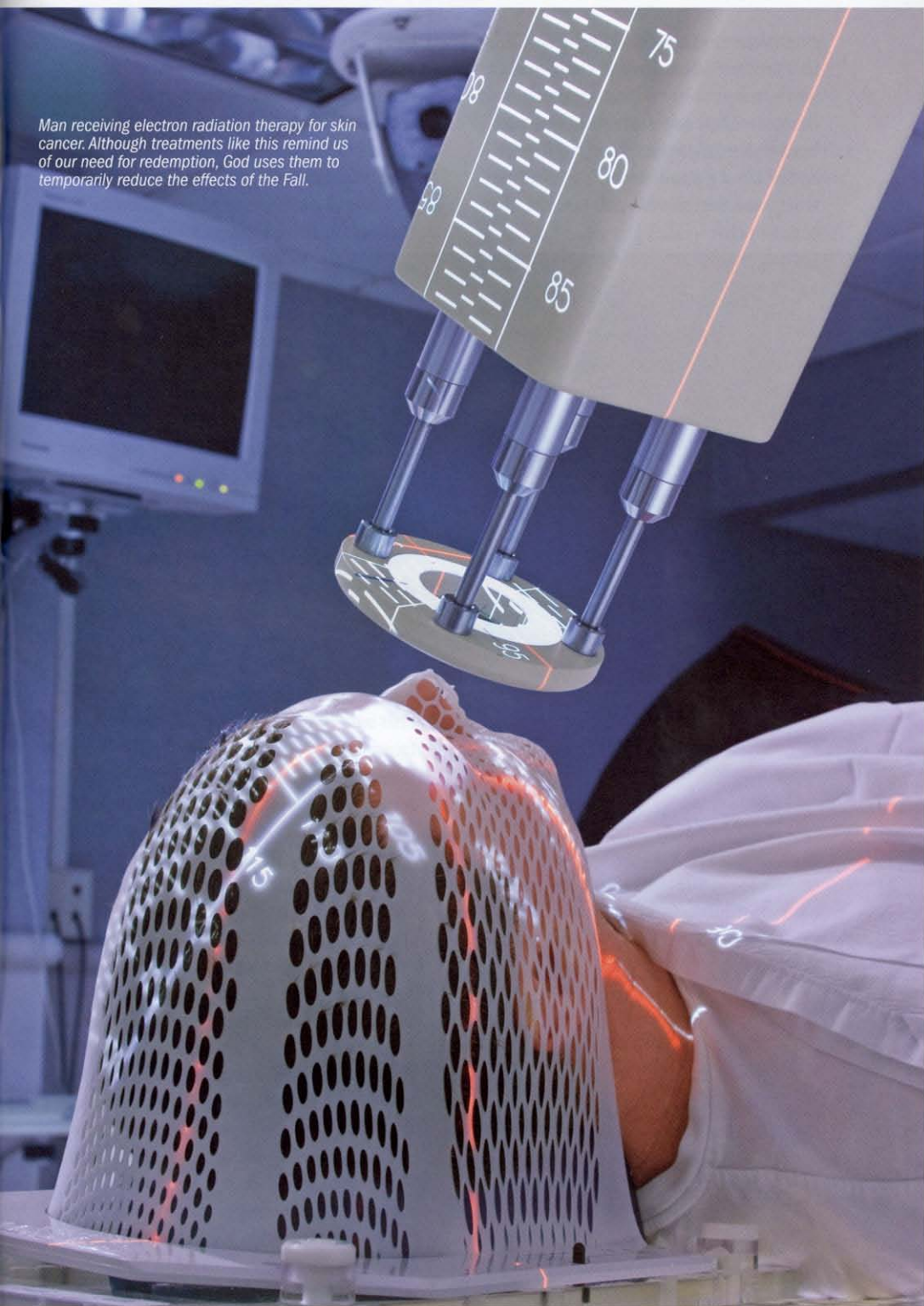
and poets have long extolled the manifold splendors of the universe. However, few have mentioned the inherent beauty and order God put into each cell. Undoubtedly, entire books could be written about the artistry and design evident there, but let's take a closer look at the specific cellular mechanisms that impact cancer.

Designed with many constraints upon it, the cell is told when to grow, divide, rest, or die. A normal cell, as part of a healthy tissue, adheres only to other cells of its own tissue type. The cells communicate with each other so the organ or tissue functions as a whole.

In a healthy cell, division is controlled by a whole set of checkpoints. When signaled to divide, the cell will check to determine whether it has adequate nutritional resources. It examines genetic information (DNA) for errors, which are repaired if possible. If not, the cell will program its own death so it won't be a threat to the organism. Otherwise, the cell grows to an appropriate size. Also, during the process of nuclear division, chromosomal segregation is checked for integrity.

As you can see, our wise Creator put many good systems in place in order for

*Man receiving electron radiation therapy for skin cancer. Although treatments like this remind us of our need for redemption, God uses them to temporarily reduce the effects of the Fall.*





organisms to function properly. Cells that behave according to their design work in harmony with one another, communicate with one another, and benefit the organism. The creation is, indeed, very good! Now, let's contrast this good design with what we see in a cancer cell.



### The Destruction of Sin

In studying the story of the curse God placed on mankind after the Fall, we read of thorns and thistles, pain in childbirth, and ultimately death. If a cell biologist had been God's instrument for transcribing Genesis, the account would have undoubtedly included cellular mutations. These mistakes in the cell's DNA result in all kinds of problems:

- Destruction of cellular communication,
- Division of cells without a signal to do so,
- Cell division when nutritional or size requirements have not been met, and
- Disabling of the programmed cell death pathway, which allows threatening cells to live.

If you examine mutations, you find they are almost universally harmful

to an organism. But neo-Darwinism relies on mutations — combined with the force of natural selection acting on these mutations — to produce all of the species we see today from a single common ancestor. In this theory, these combined forces produce organisms of increasing complexity. Contrast this with what we see in cancer, where mutations lead to the loss of normal, good pathways and ultimately harm the organism.

Cancer cells divide in defiance of normal constraints. They no longer respond to growth signals or obey cellular checkpoints and are often characterized by DNA abnormalities, small size, and unusual morphology. They do not undergo programmed cell death, nor do they communicate well with the

cells around them. When they break off from their tissue of origin, they adhere to other tissue types they normally would not associate with, allowing the cells to metastasize.

All of these examples depict good creation corrupted by mutations. If we take a look at immune involvement, we see this even more clearly. Our immune systems were designed to tolerate our own cells, protect us from things that are not “self,” and fight against cells, proteins, and pathogens from outside sources. Immune hormones, produced and secreted into the bloodstream, tell the immune cells what to do and when to do it. Custom-designed responses for viruses, bacteria, and parasites are off-switches that keep our immune systems from overreacting. It is a beautifully integrated system of communication — a *good* creation.

Unfortunately, although our immune systems are constantly on the watch for invaders, they often fail to detect cancer. Why? Because cancer cells are a part of you — your own cells that have betrayed their normal function and become parasitic. They sap the resources of the organs, crowd out normal cells, and cause dysfunction, pain, and even death, if nothing stops their progress. But in many cases, your immune system will mount little to no response against these renegades because their protein tags still mark them as “self.” The immune system simply wasn’t designed to fight against itself. These corrupted cells are, for the most part, outside its surveillance.

### The Promise of Redemption

So we have corrupted, traitorous cells and a lack of immune response to the threat. Is there any hope here?

The Genesis account does not simply describe Creation and the Fall. It also foretells redemption. As Paul told the church at Rome, creation groans as it waits for redemption. Certainly we feel the groaning as we deal with cancer, and we wait for death, the last enemy, to finally be defeated.

Yet we do not simply wring our hands and wait. As we exercise biblical stewardship over creation, we learn more about the workings of normal cells and the chaos wrought by mutations. We are able to design more effective treatments that eradicate cancer with fewer side effects. We devise improved tests for early detection, making a better prognosis possible. We correlate disease with lifestyle choices and encourage people to exercise wise stewardship of their bodies. In the not-too-distant future, we may even be able to design custom therapies based on the genetics of the individual tumor.

Cancer will likely be with us as long as the fallen creation endures. But don’t be discouraged! Our wise Creator has promised never to leave or forsake us. And in the new heaven and earth that the apostle Peter exhorts us to look forward to, cancer — like all of the corruption resulting from the Fall — will no longer have the power to harm or frighten us. ■

Dr. Heather Kuruvilla earned her bachelor’s degree from Houghton College in 1992 and her Ph.D. from The State University of New York at Buffalo in 1997. She has taught at Cedarville University since 1997, currently serving as professor of biology.



## NEXT ISSUE

In recent days, the term “universal health care” has incited both fear and relief, conviction and confusion. Consequently, we’ve been forced to think broadly about how health care intersects government, economics, sociology, and more. Join us in the next issue of TORCH (spring–summer) as we tackle key concerns related to health care. As always, we’ll examine multiple perspectives, present accurate and timely information, and look to God’s Word as our source of truth and compass for living.