Transformative Imagery: Tapping the Source of Personal and Social Change
Editor: Leslie Davenport
Jessica Kingsley Publishers, London April 2016

Chapter 8. New Cancer Imagery: Engaging Cellular Science and Ancient Wisdom

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Our scientific understanding of cancer has changed significantly since the early days, when imagery began to be used in the early 1970s as an adjunctive care strategy for cancer. The primary theory about cancer at that time, which most of us based our understanding and imagery on, was the "immune surveillance" theory. Developed by Nobel Laureate Sir Macfarlane Burnet, this model suggested that the reason we get cancer is that the immune system has become weak and can longer recognize and destroy cancer cells. Then and now, guided imagery scripts typically focused on strengthening the immune cells to eliminate tumor cells. Pioneers Carl and Stephanie Simonton were among the first to popularize this idea of the mind-body connection and the immune system's role in cancer imagery (Simonton, Matthews-Simonton, and Creighton 1978). And while some clinical success was reported from their innovative program, research studies were lacking.

Science has now proven the immune surveillance theory to be flawed: healthy immune cells do not recognize most cancer cells because the antigenic identity of the cancer cell is no different than that of normal cells (Swann and Smith 2007). The immune system is most effective at recognizing and protecting against tumors with a viral etiology, including melanoma, some lymphomas, and cervical cancer. In these cancers, the cancer cells often express new antigens so that immune cells can recognize them as foreign or "not-self" and will eliminate

them. The common belief that cancer is the result of a single genetic error is also incorrect: we now know cancer is often the result of multiple genetic mutations (Bernstein et al 2013).

The Biology of Cancer: What Is Cancer, Really?

The accepted understanding today about how cancer cells develop involves multiple genetic mutations of the growth-regulating genes, and gene expression is altered by a variety of means too complex to describe here. No wonder that imagery-enhanced immune cells did not have much impact on cancer cells. Granted, the data from numerous studies indicate that engaging in any form of cancer imagery certainly helped reduce stress, anxiety, pain, and many of the negative side effects of chemotherapy (Spiegel and Moore 1997); none showed increased lifespan or cancer reversal. More recent studies indicate that psychosocial support and imagery can provide comfort and improved quality of life (Kolcaba and Fox 1999; Roffe, Schmidt, and Ernst 2005).

I would like to propose that we begin using the latest biological understandings of cancer to inform our imagery exercises. I also integrate a psychological concept of "letting go" with biological process in my imagery exercises. Unfortunately, no research studies have yet been conducted to test the potency of any of these new imagery scripts, samples of which you'll find in this chapter. I invite you to test my ideas in your imagery practice: they may actually help people with cancer to eliminate abnormal cells, or at least to let go and soften their stress and fear using some new information and tools. I believe that by better understanding the biological processes involved in cancer, practitioners of guided imagery can write their own scripts to help their clients and patients.

The Gene Story: Correcting Gene Errors

Science now tells us that cancer cells arise due to genetic mutations of the growth-regulating genes. Often several gene errors may occur before a cell actually becomes a cancer cell. These cells may simply have an abnormal growth pattern. And we know that in human lung cancer, colon cancer, and breast cancer, at least five to six gene changes occur before a cell shifts from abnormal to malignant (Bernstein et al 2013). Some cancers show up to 100 different genetic mutations before becoming malignant. Unfortunately, once a cell acquires numerous gene errors, it becomes unstable and is vulnerable to more gene mutations. Fortunately, at an early stage many gene errors are reversible.

Repairing DNA Mishaps

It is estimated that human cells experience an average of 10,000 mutations or instances of damage every day (Ames, Shigenaga, and Hagen 1993)—so apparently our DNA repair pathways are potent cell healers and useful strategies for eliminating potentially dangerous abnormal cells. One protective mechanism the cells use to reverse gene errors is the DNA repair process. A DNA repair pathway corrects a genetic mutation when it occurs; and if unable to repair the gene, this process causes the damaged cell to die (apoptosis). Apoptosis is actually programmed cell death, which is a property of normal genes. Yet a common error that occurs in the cancer process affects genes in the DNA repair system (Dietlein, Thelen, and Reinhardt 2014). In fact, in some human cancers the repair genes have a mutation that prevents them from programming cell death in the cancer cells. With no programmed death, the cells become immortal. The unfortunate clinical result of this mutation is that a much more aggressive therapeutic course is required to eradicate the cancer cells. Clinical research is beginning to show

beneficial results with individualized immunotherapy that targets specific DNA repair defects (Dietlein 2014). Is it possible that focusing our cancer imagery on DNA repair could change the clinical course of the illness?

Stress, Our Genes, and DNA Repair

Studies from China have shown that a daily qigong practice improved the rate of DNA repair in cancer patients (Ming et al 1993). We already know that qigong, the parent of tai chi, and similar meditative movement practices reduce stress (Barrett 2013). We also know that stress impairs the DNA repair rate while increasing the inflammatory response (Gouin and Kiecolt-Glaser 2011). Stress reduction has been demonstrated to improve overall health and healing—so that one way qigong may help with gene repair is by decreasing stress (Kiecolt-Glaser and Glaser 2010). And since we know that practicing imagery can also reduce stress, by adding the DNA repair option as the focus, we may be able to create a win-win set of cancer-fighting imagery exercises.

The Internal Environment: Loosening Up, Tension, Our Genes, and Letting Go

Many things in our body, mind, and the environment influence how genes are expressed. Keep in mind that all of the cells in your body have the same genes, but not all are expressed by every cell. Heart cells don't need to use the genetic information that kidney cells use, nor do the kidney cells express heart genes. So inherent in the biological nature of our cells is the ability to turn on and off different genes. A variety of factors regulates the expression of our genes: chemical messages, hormones, the physical environment, mechanical-cellular tension, food, the seasons, and even the changing shape of our cells. One basic imagery script could simply suggest

that only the genes necessary for our health be expressed, and that genes be turned off if they don't contribute to our survival and good health.

Exciting research into the connections linking gene expression, mechanical tension, and regulation of cell growth was conducted in Dr. Donald Ingber's lab at Harvard University (Ingber 1998). Ingber showed that when normal cells are put in a petri dish, they attach themselves to the dish and begin to grow and stretch out to cover the surface of the dish. When they are stretched at maximum mechanical tension, they express the genes for growth and reproduction: they keep making more cells. When some of that mechanical tension is released, they let go of their tight attachment to the dish and no longer reproduce. These cells turn off the growth genes and turn on the genes they need to mature. How like a Buddhist principle: let go of attachments in order to mature (spiritually). When our cells begin to express the properties of mature cells, they no longer need to keep repeating the reproductive pattern. And when cells completely release their rigidity, mechanical tension, and attachment to the petri dish, they express another gene, which programs them to die. What might cells growing in a petri dish tell us about cancer? Rigidly attached cells are stretched, which triggers them to make more of themselves, to reproduce. Cells that soften up and let go of their tension stop growing, and they either become mature cells or program themselves to die.

Many years ago I interviewed a man who ran attitudinal-healing support groups for cancer patients. I asked him if he saw any patterns in people who remained in remission for long periods, or who experienced "unexpected" remissions. His observation was that they all had *let go of something big* <u>like</u> a troubled marriage or an unfulfilling job. This included my informant, who had survived stage IV lymphoma. That conversation set my mind on a course to find a healing principle in cell behavior. My *aha!* moment came when I realized that letting go

emotionally could soften the body so that the cancer cells could also let go. They would no longer express growth genes, and instead could "maturely" express genes that would trigger cell death. Dr. Valerie Weaver at the University of California takes research—about how the physical environment our cells inhabit affects their gene expression—one step further. She showed that normal breast cells that are grown in hard, rigid environments become breast cancer cells; whereas breast cells grown on a rubbery, softer environment grew normally (Weaver et al 1997). In fact, research is now showing that as the matrix or environment surrounding a tumor stiffens, this pushes the cells' growth further toward malignancy (Kandice 2009). In clinical settings, research is now underway to see whether placing different materials around the tumor will affect its growth pattern. (Weaver et al, 1997, Inber 2008)This is fertile ground for developing cancer-fighting imagery. See an example of the imagery exercise later in the chapter.

The property of a cell's structural tension was named *tensegrity* by Buckminster Fuller. *Tensegrity* refers to any structure that maintains its integrity by balancing the forces and tensions inside and outside. The geodesic dome is a man-made structure that depends on this principle. Cells are in a constant state of movement, continuously changing their shape and balancing internal and environmental tensions—all of which intimately affects the genes that will be expressed. As we've seen, tightness sends one message to the cell; letting go, softness, and relaxation a different message.

Sample Imagery Scripts

I am offering several options that will allow you to interweave the current biological understandings of cancer into your own guided imagery scripts. You can easily build from these foundations and create your own metaphors:

- *Change the immune identity of the cancer cells*. In order to fulfill the requirement for immune cells to be able to eliminate cancer cells, the cancer cells must reveal new membrane markers that identify them as foreign "not-self" cells. Immune cells are then able to recognize these newly revealed foreign antigens and destroy the cells. This is apparently the case for the cancers that meet some immune destruction like melanoma or some lymphomas.

- *Fix cells for DNA repair and program cell death*. Either fix the genes for repair, or make new genes that can fix the gene mutations; or instead, program cell death of all the abnormal and cancer cells.

- *Change the internal environment* surrounding and supporting the cancer cells, softening it so that the cells no longer reproduce; and soften even more to help the cells initiate cell death.

Here are some sample exercises for beginning and ending guided visualizations that I am sure you can embellish and improve with your own perspective.

BOX START

For Induction of Relaxation (prior to the imagery)

I invite you to get comfortable, find a quiet, safe place to sit or lie down. Have close at hand some drawing materials to use after your imagery journey. Close your eyes and feel where your body touches the chair or floor; feel your feet on the floor. Pay attention to your breath. Notice the flow of your breath in and out of your nostrils. With each exhalation, let go of any thoughts or tensions. Notice the temperature of your hands. Feel the flow of your breath by

putting one hand on your belly and the other on your chest: notice which hand moves more. You are creating an awareness of how your body feels now, to compare with when you complete the imagery. Relax, feel your body being held by the earth, the chair, and the floor. Feel supported and safe, and know that whatever you experience here will do no harm. We ask for guidance for your healing to take place in the best possible way.

Go to the place in your body that feels like your center, your core. It could be your heart, your belly: you know what feels like your center. Breathe into that place. Next, bring your attention to what feels like your outside edge. Does your outer boundary stop at your skin, or does it go beyond your skin? There is no right or wrong, only what you experience, sense, or imagine. Now sense both your inner core and outer edge, and as you breathe, imagine or sense them connecting together. (This ends the basic induction section that should be used to launch the following imagery exercise samples.)

Changing Immune Identity (continue after the induction above)

Now imagine that the edges of any cancer cells in your body are changing their identification markings so that they reveal a new bumpy edge; this will let the immune cells instantly detect their presence and eliminate them. See your immune cells becoming aware of these abnormal and cancerous cells and eliminating them. Sense or imagine all abnormal cells leaving your body, and that you're now whole and healthy. Go once more to your center and your outer edges. Become aware that all your normal, healthy cells have strong boundaries, and any cancer cells have been removed. Sense yourself breathing from your core and to your outer edges. Thank your body for doing such a good job for you.

Changing Genes and Immune Identity from Inside Out (continue after the induction above)

Sense or imagine that a flexible, shimmering fabric composed of strands of strings and tubes connects both your inner core and outer edges. The tension and pull exerted by this fabric can modify the expression of your genes. Sense or imagine which genes your cancer cells need to change. It could be that you tug on the genes so that they express new identity markers on their outer edges, so that the immune cells can detect their presence and destroy them. If you choose this option, sense or imagine that the outer edges of all your cancer cells exhibit new detectable markings. You might even see what these ID characteristics are: their symbols, shape, colors.

Gene DNA Repair (continue after the induction above)

Now focus your attention inward and notice if there is any part of your body that feels tense or painful. Ask that area if it needs anything from you, and listen to the response. Using your intuitive instincts, try to find any abnormal cells in your body. If you sense abnormal or cancer cells, bring your attention to their core where the DNA is spiraling inside those cells. Bring a laser light to the top of the DNA molecule and see it's light traveling down the center of the DNA core, correcting any and all errors that may exist there as it moved downward. You can also ask the abnormal or cancer cells to program themselves to die and leave your body, making all the corrections necessary for your health. Imagine that any abnormal cells remaining have regained their ability to repair themselves and all their DNA.

See that all your cells are healthy, and that only the healthy ones are thriving. And when you are ready, bring your awareness to your breath, feel your hands, and anchor this imagery by

touching two fingers together. When you're ready, slowly open your eyes. If any images came to mind, take a few minutes to draw them or write about them.

Changing the Internal Environment (continue after the induction above)

Take some time to enter the inner space of your body. Close your eyes and let your breath move deeper into your belly and lungs. Breathe so that you receive the life-giving oxygen your cells need. Now imagine yourself as one giant cell that knows the core and wisdom of your entire cell-self. Breathe into that core and then sense the outside edges of your cell-self. If you know that there are abnormal areas hiding within your body or you even suspect it, imagine or sense these abnormal molecules or cells. Continue to breathe normally.

When you feel ready, imagine or pretend that any abnormal cells are becoming less rigid. Know that the strings of your cells can vibrate and set the strings in nearby cells vibrating as well, all in resonance, shifting shapes and tension. Instead of holding tight to the tissues where they are now spending time, they soften up as though they are relaxing on a soft mattress. The genes in these cells have now been altered and are unable to reproduce any more. Imagine your cancer cells letting go of their attachments to your body, releasing tensions and leaving your body. Instead of clinging to their tight anchor, they relax and turn on their "time to die" signal. Allow yourself to experience the inner journey of these genes for as long as you like.

When you're ready, bring your awareness and breathe back to your cell-self and begin humming "mmmmm" to fill the space where the cancer or abnormal cells were with healing energy. You don't have to know the specifics of where they were or what they looked like: just know that you and they have let go of the hold they had on your body and spirit. Hum, drum;

ring a Tibetan bowl to fill you with vibrating energy, peace, and love. Thank your cell-self for taking such good care of you, and thank yourself for changing your mind and taking on a new program.

Program Cell Death Through the Inner Bubble (continue after the induction above)

Feel or sense where there may be cancer cells in your body. What do they look like? What is their shape and color, and do they have a sound associated with them? Now imagine that an invisible bubble penetrates the cancer cells' surface, both puncturing it and facilitating its death—a gentle, bubbling death. Imagine or sense the cell bursting and being quickly eliminated from your body. Is there a picture or sound that came to mind? If so, draw it, say it, and see all the abnormal cells eliminated.

Basic Ending to Any of the Scripts

Thank your body for helping you heal. Now take a few minutes to be aware of how you feel; feel yourself in the room, on the chair or floor, feel your breath. Rub your hands together, noticing their temperature. Bring them up to your face for a few moments and then put them in you lap or to your sides. When you are ready open your eyes. Take some time to write or draw any insights you got from this journey.

BOX END

As medical research brings more understanding to the many ways that genes can change that lead to cancer, we can also become more empowered to explore the inner healing modalities based on the science. We know that healing happens at many levels; that the emotions and

imagination are two powerful doorways into the healing treasures within you. Of course, one key is to know how to quiet the mind and listen for the wisdom within.

So I invite you to take time to explore these basic ideas from the standpoint of the new biology, and please add your own spin and expertise to these scripts. Together we can help our patients heal. Please feel free to contact me at my website so that we may build on this evolving understanding.

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