The Fractal Body

The chaotic nature of human body structures

As you scan these four figures below—left to right—you'll notice that the smaller portions of the human vascular (blood vessel) system roughly resemble the general structure (for example, the varying sizes of vessels and the complexity of branching).

This characteristic of many human structures is called "self-similarity." Selfsimilarity is found in fractal structures. Fractal structures are chaotic forms that are complex even though only a few simple mathematical rules can produce their shapes.

One advantage of self-similar, or fractal, structures in the human body is that such high complexity of structure allows a high complexity or amount of function. Another advantage is that since only a little information is needed to make a fractal shape, only a few genes can produce a very complex body system.

Unless you have a really wide monitor with high resolutions display, you'll have to scroll to the right to see all four frames. Unless you have a really huge printer (and paper) or you copy these figures to another program and reduce their size you will not be able to print this on a page. Don't worry—just look at it here.

The Fractal Nature of the Human Vascular (Circulatory) System

