

## Right Brain: Go medicine! A match millennia in the making

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The large dark cluster in the left corner looks all but conquered by the infiltrating cells gone awry. The bright flower-shaped blossom amid the speckles like a winter snowstorm signals a massive battle about to commence between two giant forces. Yet to understand the true meaning of what lies ahead requires a lower magnification: the ability to synthesize information obtained from each section of the field in order to make a decision. With a confident swipe and a loud click, he makes his move. “Your turn,” he says.

With its origins in China over 2,000 years ago, Go, or weiqi, is a two-player game in which black and white stones are placed on the vacant intersections of a  $19 \times 19$  board. Alternating turns placing pieces on the board, each player attempts to surround as much territory as possible while simultaneously preventing the opponent from doing the same. Indeed, directly translated, the two Chinese characters representing weiqi means the game of encircling. When one player’s stones are completely surrounded by the opponent’s connected chain of

stones, they may be captured. Yet because the board is so large, one must choose wisely the location on which to place a stone, balancing surrounding territory with disrupting the opponent and preventing him or her from gaining territory. While simple to learn, Go is a game that requires a lifetime to master (figure).

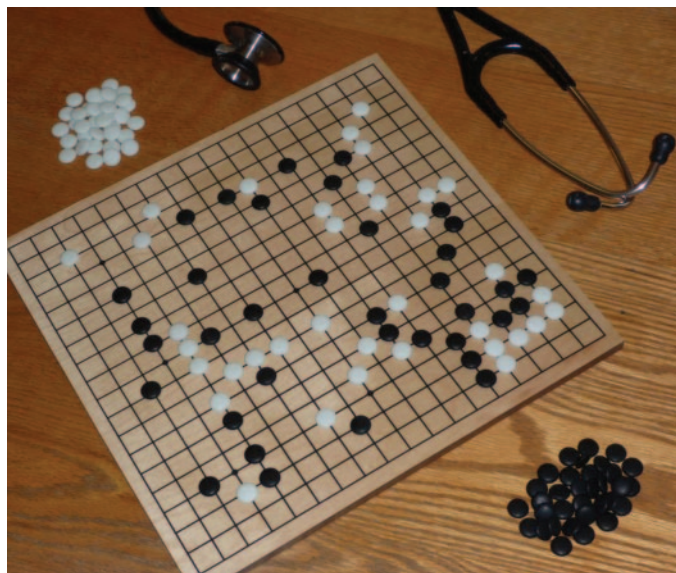
Unlike chess, which begins with a set number of pieces and an ensuing clash of destruction between two opposing forces, Go emphasizes the importance of constructing a new future,<sup>1</sup> just as the goal of medicine is to construct a better future for humanity, and to instill hope for future generations.

While literature has drawn parallels between the battlefield and the Go board for millennia, the mentality and thought process that is required for playing a Go game is quite similar to the decision algorithm that occurs with clinical medicine. Golub<sup>1</sup> describes how the philosophy of Go occupies a unique position in the hierarchy of games that endows it unique similarities with medicine. Being a clinician is about sorting through the clutter, asking the relevant questions, understanding the underlying problems, performing logical thought processes, and developing sound solutions. This process applies equally well to the game play of Go.

Just as Go is a two-player game, so is medicine. Physicians must elicit information as well as provide recommendations, which require tremendous flexibility and ability to personalize a patient’s health care experience. Recognizing psychiatric illness such as depression, for example, often requires the ability to communicate beyond words, utilizing observations of body language, tone of voice, and behavior. In many ways, in addition to logic and knowledge, tremendous artistry is required for both a successful Go player and a successful healer.

Cognitive processes such as memory, problem-solving, decision-making, mental imagery, and pattern recognition are essential in both medicine and Go. A  $19 \times 19$  board offers almost infinite possibilities for any single move; so many possibilities, in fact,

**Figure** Depiction of the 1976 Japanese Meijin first title match



From Northwestern University Feinberg School of Medicine, Chicago, IL.  
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that it is one of the few games in which a computer program has been unable to defeat the highest level professionals. And while the human body has remained the same over the centuries, the understanding of physiology and the therapeutic targets are so vast that no computer is able to take over a physician's role. From a pathology slide to a list of presenting symptoms, the medical professional must be able to recognize patterns, and foresee the future before a catastrophe occurs.

In Go, the ultimate goal of each game is not necessarily to win, but for players to respect and enlighten each other: to learn and to push the personal boundaries of achievement. Go is one of the few games that can easily be played between those with vastly different experience levels via handicaps, or extra stones for the more novice player. In medicine, interactions between different members of a medical team allow for growth at all levels, from the clinical decision-making skills of the junior medical student to the teaching skills of the attending physician. In Go as in medicine, it is impossible to win every game,

just as it is impossible to cure every case, but it is possible to continually improve, to constantly grow and learn. No other profession or game is as rooted as medicine and Go are upon the foundations of growth, humility, and ethical values.

Just as it is essential to recognize threatening patterns and stop an opponent from expanding his or her territory at an early stage, it is essential in neoplastic pathology to detect foreboding patterns at a low grade. Just as an experienced Go player must understand the entire Go board and be able to prioritize his or her moves, medical personnel must be able to perform triage in an emergency situation. Most importantly, just as those who engage in Go cherish human interactions and develop flexibility, respect, discipline, and continual self-improvement, so do those practicing in the medical profession.

## REFERENCE

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