The continued understanding of gene structure, function and how its product interacts in the human body has lead to new wave of ideas on cancer therapy. Gene therapy, which 20 years ago was just a dream is now a very real possibility and alternative to the conventional treatments. Three new methods of utilizing alternative gene structure and manipulating the body's response to induce a tumor effect are presented here. Immunotherapy is the induction of the human immune system against an unwanted antigen. Viral oncolysis is the utilization and manipulation of natural human pathogens against tumor cells. Gene transfer is the addition of deletion of vital genes responsible for cell growth and apoptosis.