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Sommario/riassunto	In the last decade, research on cold atmospheric plasma (CAP) has significantly advanced our understanding of the effect of CAP on cancer cells and their potential for cancer treatment. This effect is due to the reactive oxygen and nitrogen species (RONS) created by plasma. This has been demonstrated for different cancer cell lines and the first clinical trials showed promising results. In addition, plasma could be combined with other treatments—such as immunotherapy—to boost its anticancer activity. The addition of new research tools to study the response of cancer cells to CAP—such as 3D in vitro, in ovo, and in vivo models and in silico approaches—as well as the use of -OMICS technologies could aid in unravelling the underlying mechanisms of CAP in cancer treatment. In order to progress towards widespread clinical application of CAP, an integrated study of the multidimensional effect of CAP in cancer treatment is essential. In this book, reviews and original research papers are published that provide new insights into the mechanisms of cold atmospheric plasma in cancer treatment, based on in vitro and in vivo experiments, clinical studies, as well as computer modeling.