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Abstract #17
Should We Be Concerned that Hyperbaric Oxygen Will Enhance Angiogenesis in Tumors and Thus Increase Malignant Growth and Recurrence?

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BACKGROUND
The first reported concern that hyperbaric oxygen might have cancer growth enhancing effects appeared in a paper by Johnson and Lauchlain in 1966. In their series of patients treated with hyperbaric oxygen radiosensitization, the authors reported a more frequent than expected incidence of metastases and a patter of metastasis. Certainly, it is a reasonable concern that a therapeutic modality which is recommended as an adjunct to healing and is administered to promote proliferation of fibroblasts, epithelial cells and blood vessels in a wound could also lead to proliferation of malignant cells and angiogenesis in the tumor as well.

METHODS
The process of angiogenesis in wound healing and in cancer growth are compared and contrasted.

RESULTS
At first glance, similarities are striking. However, significant differences are detected including cassation of angiogenesis and the controlling growth and inhibitory factors in each circumstance. Tumors that grow in hypoxic circumstances have been shown to be more prone to metastases and more lethal to the patients affected by these tumors. Animal and clinical studies do not demonstrated enhanced growth as a result of hyperbaric oxygen.

CONCLUSIONS
The available evidence including the known mechanisms of tumor angiogenesis do not support the fears that hyperbaric oxygen will enhance malignant growth.