

# [The effect of oxygenation on the biological behaviour of tumours].

[Article in Hungarian]

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## Source

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## Abstract

Malignant tumours often display hypoxic tissue areas where the oxygen tension is  $< 7$  mm Hg. Studies in this field have proved that the hypoxic state boosts tumour progression and aggressive behaviour. In tissue culture experiments "in vitro" oxygenation was found to inhibit in itself the proliferation of cells of healthy tissues as well as benign and malignant tumours. It is a very important observation from oncotherapeutic point of view that in the presence of partial oxygen pressure  $< 2.5$  mm Hg the radiosensitivity decreases (intrinsic radioresistance). Most of the anticancer drugs (cytostatics) are also ineffective in hypoxic tumours (chemoresistance). The same is true for photodynamic treatments in oxygen deficiency or hypoxia. From time to time attempts based on these experimental and clinical observations are made to use oxygenation either as an adjuvant or an independent treatment in tumour patients. The most frequent treatment forms are: inhalation of oxygen gas (hyperbaric oxygen therapy), use of oxygen saturated water either in water or drinking cure. Recent international studies unanimously confirm the beneficial effect of oxygen intake on therapy, radio- and chemosensitization. The widespread erythropoietin treatment underlines the significance of oxygenation in tumour therapy. It seems reasonable to extend the preliminary studies on the tumour inhibitory, radio- and chemosensitizing effect of oxygenation to large study populations in major medical institutes in Hungary.

## Comment in

- [\[The effect of oxygenation on the biological behaviour of tumours\].](#) [Orv Hetil. 2007]

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