The other reason why cancer cells are hypoxic.

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The “Oxygen Effect” describes how well oxygenated tumor areas respond to radiotherapy by up to a factor of three better than hypoxic areas. Like in any tissue, the O2 level in a tumor is determined by the balance between vascular supply and consumption mostly via cell respiration. Misinterpretation of the so-called Warburg effect (i.e. O2-independent, high rate glucose metabolism) led to make O2 consumption poorly contributing to the final tumor pO2; the extent of angiogenesis and tumor perfusion through neo-formed blood vessels were thus considered as the main determinants of tumor oxygenation.
In the last decade, however, it became clear that in most cancer cells, mitochondria represent a major hub for a variety of biosynthetic pathways and respiration largely contributes to tumor hypoxia. Moreover, the end-glycolytic product lactate (upon reconversion into pyruvate) was identified as a major fuel for the TCA cycle. Lately, drugs were thus developed (or re-purposed) to block cancer cell respiration and/or oxidative metabolism and thereby make O2 more available to radio-sensitize tumors. This approach will be illustrated through recent progresses made with a blocker of the mitochondrial pyruvate transporter.