

Like most [tumors](#), [meningiomas](#) prefer anaerobic [glycolysis](#) for energy production ([Warburg effect](#)). This leads to an increased synthesis of the metabolite [methylglyoxal](#) (MGO). This [metabolite](#) is known to react with amino groups of [proteins](#). This reaction is called [glycation](#), thereby building advanced glycation endproducts (AGEs). In a study, Selke et al investigated the influence of glycation on two [meningioma cell lines](#), representing the WHO grade I ([BEN-MEN-1](#)) and the WHO grade III ([IOMM-Lee](#)). Increasing MGO concentrations led to the formation of AGEs and decreased growth in both cell lines. When analyzing the influence of [glycation](#) on [adhesion](#), [chemotaxis](#) and [invasion](#), they could show that the [glycation](#) of [meningioma](#) cells resulted in increased invasive potential of the benign meningioma [cell line](#), whereas the invasive potential of the malignant cell line was reduced. In addition, [glycation](#) increased the [E-cadherin](#)- and decreased the [N-cadherin](#)-expression in [BEN-MEN-1](#) cells, but did not affect the [cadherin](#)-expression in [IOMM-Lee](#) cells ¹⁾.

¹⁾

Selke P, Rosenstock P, Bork K, Strauss C, Horstkorte R, Scheer M. Glycation of benign meningioma cells leads to increased invasion. Biol Chem. 2021 Mar 17. doi: 10.1515/hsz-2020-0376. Epub ahead of print. PMID: 33725749.

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