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Aldo Conca, Martina Kubitzke and Volkmar Welker*

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We prove that syzygies of Stanley-Reisner rings of simplicial complexes under iterated barycentric subdivisions and edgewise subdivisions exhibit a similar behavior as syzygies of algebraic varieties under high Veronese embeddings (see the work of Ein, Lazarsfeld and Erman and Zhou). These two combinatorial operations on simplicial complexes have some formal similarity (but also some important dissimilarity) with the formation of the Veronese subalgebras. In particular, the edgewise subdivision of a simplicial complex is closely related, via initial ideals, with the formation of Veronese subalgebras of the associated Stanley-Reisner ring, but this relation together with the results of Ein et. al. and Zou imply only some fraction of the nonvanishing of syzygies of edgewise subdivisions derived in our work. (Received August 22, 2014)