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The Birkhoff polytope B_n is the convex hull of all $n \times n$ permutation matrices, and is a long-studied polytope related to many areas of mathematics. This talk will discuss a generalization which considers subpolytopes $B_n(\Pi)$ of B_n whose vertices correspond to permutations avoiding a given set of patterns Π . We will pay special attention to $B_n(132, 312)$ due to its relationships with certain EL-shellable posets, shifted standard Young tableaux, and (P, ω) -partitions. These relationships allow us to determine the Ehrhart series of the polytope as well as an exact formula for its normalized volume. (Received March 05, 2017)