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Lagrange interpolation in convex polytopes  
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We derive a general, dimension-independent construction of polynomial Lagrange functions for certain sets of points in a convex polytope. The functions are derived recursively, downwards through the dimensions of the faces. By choosing an appropriate number of points in each face, and transforming the functions into rational Lagrange functions, we obtain rational interpolation with polynomial precision of arbitrary order. For a hypercube, using different (smaller) numbers of points in the faces, we obtain polynomial interpolation in the spaces of serendipity finite elements.