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We give a more precise symmetric parametric description for various properties of the Askey-Wilson polynomials including hypergeometric and q-integral representations. This description is then applied to connection relations and to generating functions. We produce new q-integrals and basic hypergeometric transformations when applied to known generating functions for the symmetric families. This method is applied to generalize generating functions in terms of arbitrary parameter values. (Received April 26, 2019)