We introduce an injective version of the complete intersection dimension of Avramov, Gasharov, and Peeva. We show that (a) it characterizes the complete intersection property for local rings, (b) it fits between the classical injective dimension and the G-injective dimension of Enochs and Jenda, (c) it satisfies a version of Chouinard’s formula for injective dimension, (d) it provides modules with Bass numbers that are bounded by polynomials, and (e) it improves Bass’ conjecture (which was proved by Roberts) for finitely generated modules of finite injective dimension. (Received July 27, 2018)