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compound eye of *Drosophila melanogaster* with vertebrate eye --
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Sommario/riassunto

Drosophila melanogaster (fruit fly) is a highly versatile model with a genetic legacy of more than a century. It provides powerful genetic, cellular, biochemical and molecular biology tools to address many questions extending from basic biology to human diseases. One of the most important questions in biology is how a multi-cellular organism develops from a single-celled embryo. The discovery of the genes responsible for pattern formation has helped refine this question and has led to other questions, such as the role of various genetic and cell biological pathways in regulating the process of pattern formation and growth during organogenesis. The *Drosophila* eye model has been extensively used to study molecular genetic mechanisms involved in patterning and growth. Since the genetic machinery involved in the *Drosophila* eye is similar to humans, it has been used to model human diseases and homology to eyes in other taxa. This updated second edition covers current progress in the study of molecular genetic mechanisms of pattern formation, mutations in axial patterning, genetic regulation of growth, and more using the *Drosophila* eye as a model.
