

The ability of a daughter cell to retain a memory of the gene expression patterns that were present in the parent cell is an example of **epigenetic inheritance**. This term has subtly different meanings in different branches of biology, but we will use it in its broadest sense to cover any heritable difference in the phenotype of a cell or an organism that does not result from changes in the nucleotide sequence of DNA (see Figure 4–35). We have just discussed three of the most important mechanisms underlying epigenetic changes, but others also exist (Figure 7–86). Cells often combine these mechanisms to ensure that patterns of gene expression are maintained and inherited accurately and reliably—over a period of up to a hundred years or more, in our own case.

