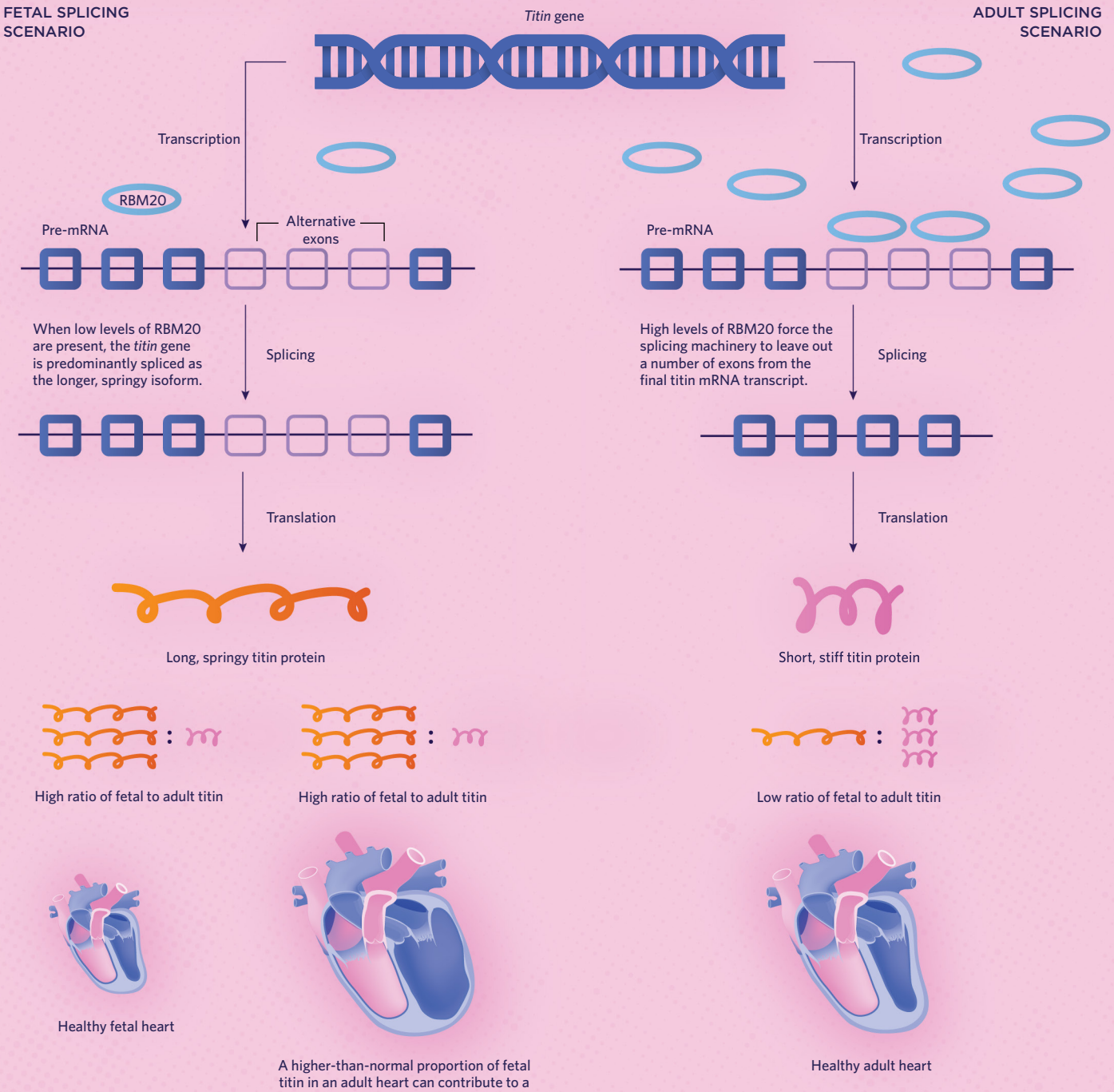
SPLICING MATTERS

Titin, which codes for a protein in muscle, is one example of a gene whose pre-mRNA transcript can be spliced in multiple ways to yield different protein isoforms. During development of the fetal heart, more exons are left in during splicing, which produces a relatively long, springy protein. In adult hearts, an RNA-binding protein called RBM20 associates with long stretches of the mRNA transcript during splicing, forcing the spliceosome to cut out those bits of DNA. The result is a relatively short, stiff protein. If RBM20 is missing or defective in adult hearts, these hearts will produce more fetal, springy titin protein relative to the stiff adult version. This is thought to reduce the capacity of the heart to contract, contributing to a condition known as dilated cardiomyopathy.



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