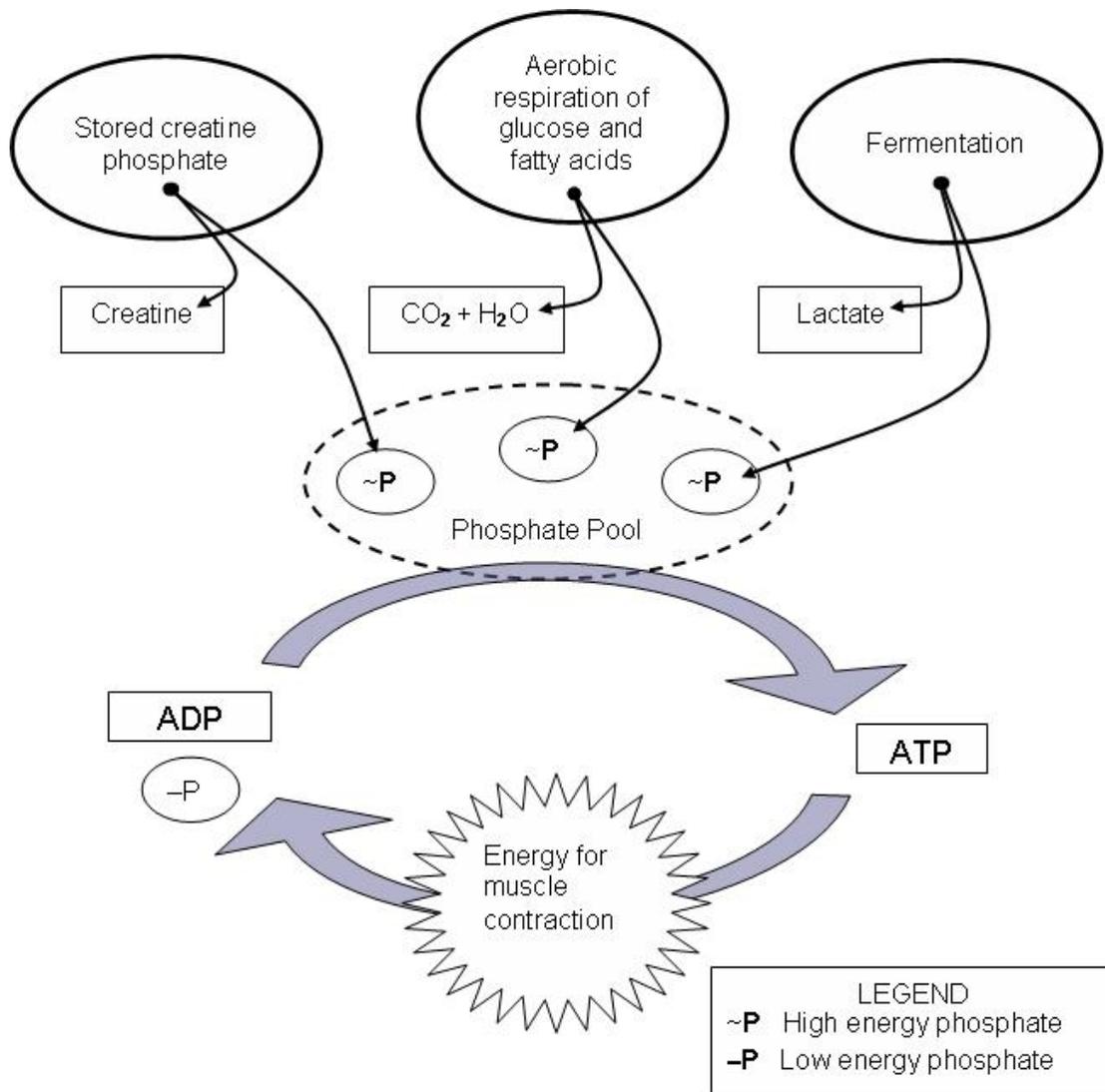
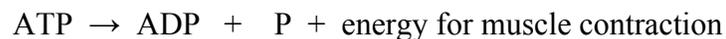


Energy Sources for Muscle Contractions

Three Sources of Energy for Muscle Contraction



ATP is the energy currency of all cells. All work performed by cells, including muscle fibre contraction, is “paid for” with the expenditure of ATP. ATP breaks down into ADP and P, and energy stored in the ATP is released and used in muscle contraction.



But very little ATP is stored in cells and after a few muscle twitches, the stored ATP molecules are spent. As muscle fibre contraction continues, additional ATP is regenerated using the energy from three sources: stored creatine phosphate, aerobic cellular respiration, and fermentation.

The diagram above summarizes the transfer of high energy phosphates (~P) from the three sources and their reaction with ADP, thus creating a large supply of ATP which powers muscle contraction.