Abstract: The Central Balkans has great importance for understanding the spread of the Neolithic in Europe, especially the issues related to the Neolithic demographic transition, yet little is known about the population dynamics of this region during this critical period. In this study, which is a part of the ERC BIRTH project, we apply the method of summed calibrated probability distributions on the published radiocarbon dates from Serbia in order to make a preliminary reconstruction of population dynamics during the Neolithic in the Central Balkans. The results suggest that there were interesting demographic events: 1) an initial population increase episode related to the earliest Neolithic ~6000 calBC followed by a trough ~5700 calBC which was in turn followed by a rebound 2) another decrease between 5500 and 5400 calBC, just before the transition from the Early (Starčevo) into the Late Neolithic (Vinča) period 4) major population growth during the Late Neolithic period. It should be emphasized that these results should be taken as preliminary and tentative as they are based on a relatively small set of published radiocarbon dates collated from various sources motivated by different research agendas which might have introduced some bias into the results.