This study examined how the loss of a partner affects older adults’ networks of personal relationships, their loneliness and their mortality risk. The first question was how older adults’ networks change after partner loss, in particular, how many others widows and widowers turn to, whether they receive emotional or instrumental support from these others, and who these others are, children, other kin, friends or other relationships. The next question was whether increased support and contact exchanged with significant others protects widows and widowers from increased loneliness and mortality. Using observations between 1992 and 2002 from the Longitudinal Aging Study Amsterdam, this study compared older adults who became widowed during this period with older adults who were continuously married. Results show that contact and support were low before widowhood, and increased in all relationships after widowhood, and more so in child and sibling relationships. Around 2.5 years after widowhood, contact and support started to decrease. In the long run, increased support protects older widows and widowers from social loneliness, but not from emotional loneliness. Men had a temporary increased mortality risk after partner loss, which was aggravated if contact with children and family networks decreased as well. Widows did not have a temporary increased mortality risk and their mortality risk decreased when their level of instrumental support increased after partner loss. This study highlights the plasticity of the network as a supportive convoy in late life and shows how important changes in older adults’ social resources are for their health.