Appropriate first aid treatment of a burn reduces the severity of injury. Recent research indicates that the optimal time to cool a burn in cold running water is 20 min. However, there are wide variations on the recommended optimal cooling time in the literature available to the public. The aim of this study was to determine current level of knowledge of first aid for a burn of the general population. More than 7000 New South Wales (NSW) residents were asked questions relating to knowledge of first aid for a burn as part of the 2007 NSW Population Health Survey. Logistic regression was used to determine factors associated with a lack of first aid knowledge. Overall, 82% of the population, unprompted, reported that they would cool the burn. Of these, 32.5% reported they would cool the wound for less than 10 min, 42.5% for 10–19 min and 25% for 20–30 min. Speaking a language other than English at home (OR 2.23, 95% CI 1.56 to 3.19), and being over 65 years (OR 1.85; 95% CI 1.45 to 2.29) were associated with a lack of knowledge. The majority of the NSW population know that the application of cold water is appropriate first aid for a burn, however less than a fifth knows to cool the wound for the recommended time. This study demonstrates a gap in public knowledge especially in non-English speakers and those over 65 years and highlights the need for a clear consistent message which identifies the time required to cool the burn wound.