The outlook is bleak for a person that is obese today. A study published by the American Journal for Public Health suggest that an obese person will never achieve the normal weight. The study shows that the annual probability of a man who is obese and will hit a normal weight is only 1/210. For women, it is 1/124. These stats are based on members of the study that are listed with a BMI between 30.0-34.9. The study also shows those who are morbidly obese, if you are within the BMI range of 40.0-44.9 the annual probability of you getting to a normal weight reduces to 1/1,290 for men and 1/677 for women.

<http://washington.cbslocal.com/2015/07/20/study-probability-of-obese-people-reaching-normal-weight-less-than-1/>

The study uses 9 years of data formed by researchers in King’s College in London.

<http://ajph.aphapublications.org/doi/pdf/10.2105/AJPH.2015.302773>

After doing some further research I found that a lot of these are conflicting. The American Journal for Clinical Nutrition surveyed 500 women adults, 228 of whom were overweight or obese [body mass index (BMI) ≥27 kg/m2] at their maximum non-pregnant weight.

Of these 228, 47 (20.6%) met the criteria for successful weight loss maintenance: they had intentionally lost at least 10% of their body weight and maintained it for at least 1 year.

<http://ajcn.nutrition.org/content/82/1/222S.long>

There is some further research to be done in this space, however one thing can be inferred from these studies. The probability of losing the weight is higher than the probability is of keeping the weight off long term.

The data was not provided for me to reproduce the results. However, looking at the data, in this article you can see that the probability of an American can keeping of the weight is about 35% - if they lost 5%-9.9%. <http://weightology.net/weightologyweekly/index.php/free-content/free-content/volume-1-issue-2/how-successful-are-u-s-citizens-at-maintaining-long-term-weight-loss/>

As a next step, I’ll look to reproduce the graph in Python as soon as I can.