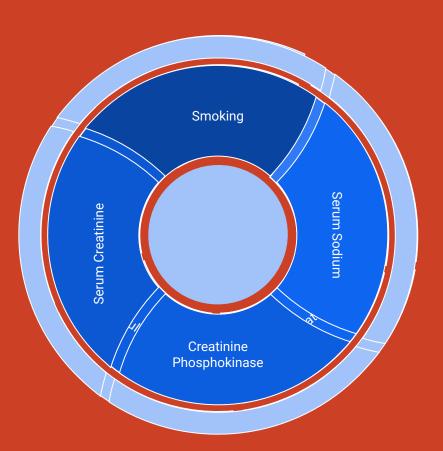
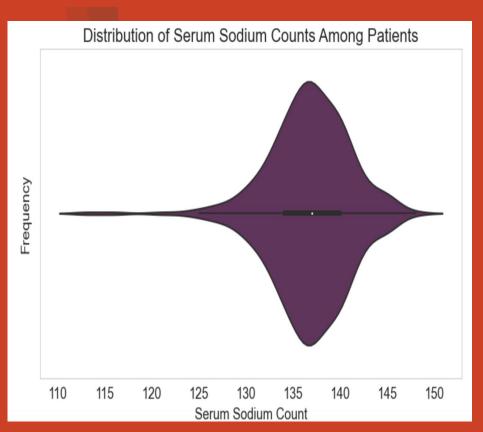


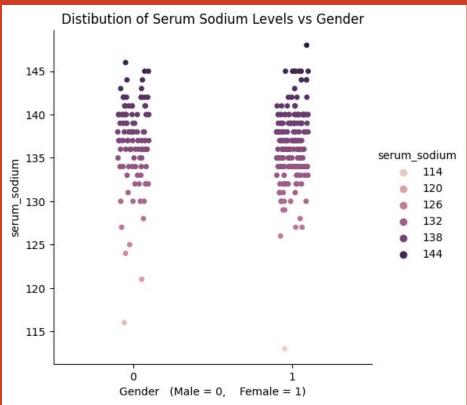
Introduction

What are the causes of heart failure? There are many factors that have a role in heart failure. What we will focus on is the age and gender of the person. While also comparing the levels of serum creatinine, serum sodium, and creatinine phosphokinase. Lastly, is smoking a factor in heart failure? Are there any trends in these relationships?

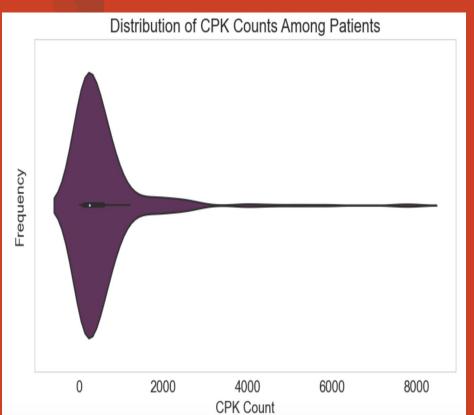


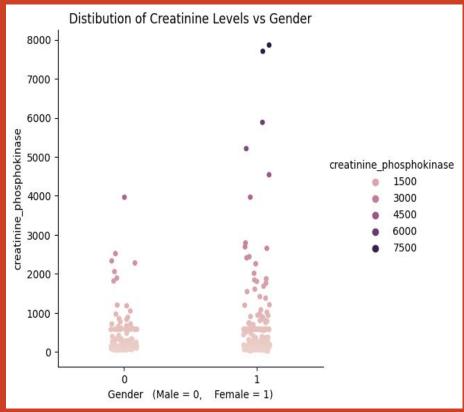
What's the relationship between heart failure and Serum Sodium?



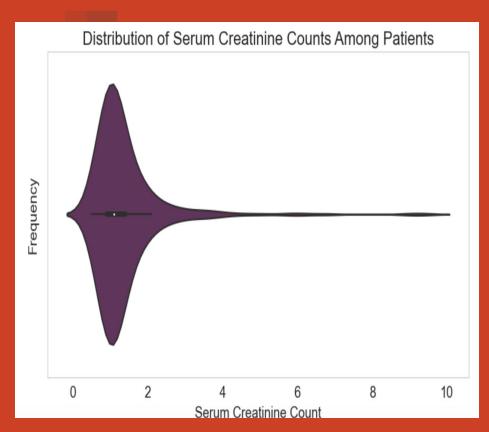


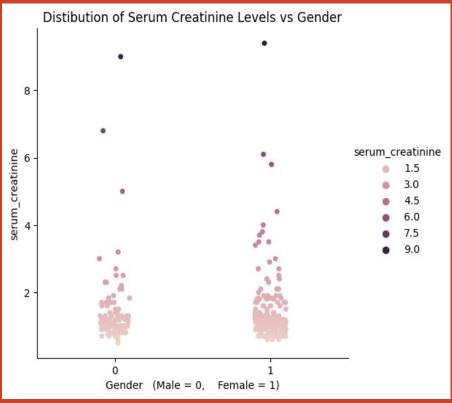
What's the relationship between heart failure and CPK?



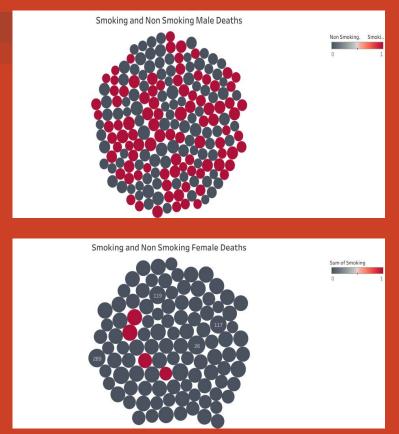


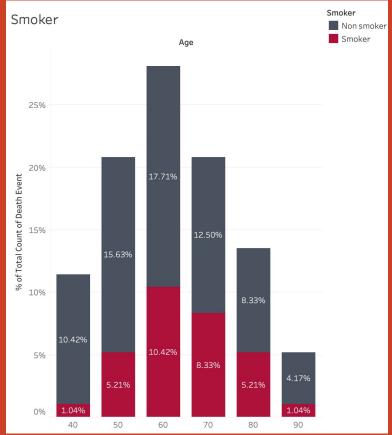
What's the relationship between heart failure and Serum Creatinine?



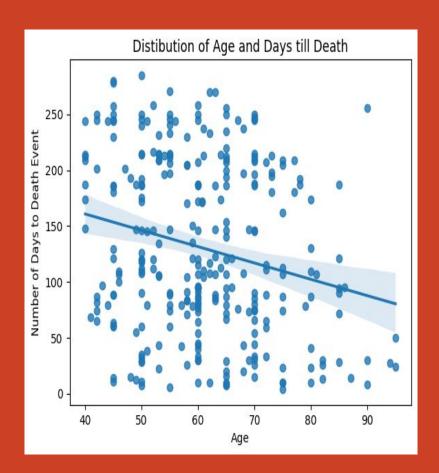


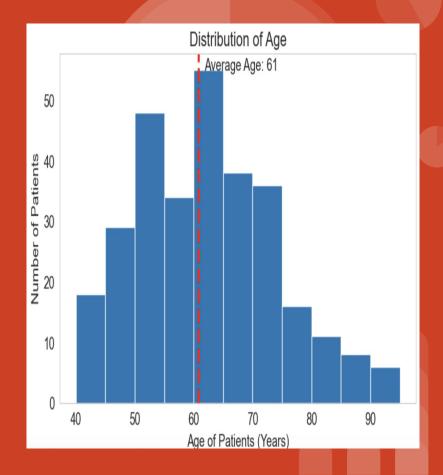
What's the relationship between heart failure and smoking habits?



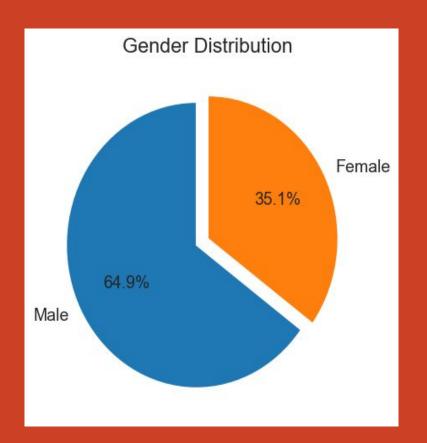


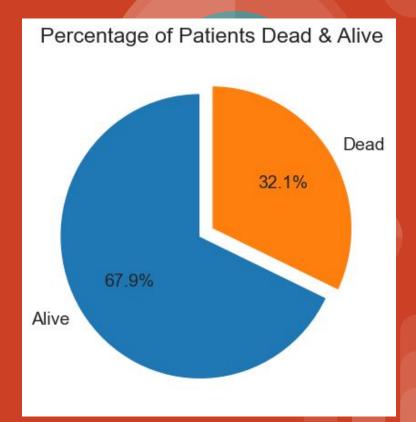
What's the distribution of age among the patients?





How's the gender distributed?





Recommendation

Based on the information provided, we recommend the following:

- Monitor their serum sodium and creatinine levels regularly, as imbalances in these electrolytes
 can worsen heart failure symptoms and lead to further cardiac damage.
- Consult with a healthcare provider to properly manage their heart failure and related conditions, such as kidney disease.
- Quit smoking to reduce the risk of further cardiac damage, as well as to improve overall health and well-being. This includes avoiding secondhand smoke exposure as well.
- Maintain a healthy diet and engage in physical activity as advised by a healthcare provider, as this can help to improve heart function and manage heart failure symptoms.
- Adhere to medication regimens as prescribed by a healthcare provider, as this can help to manage heart failure symptoms and prevent further cardiac damage.

By following these recommendations, individuals with heart failure can work towards managing their condition and improving their overall health and well-being.