In [12]:

```
# 연습문제 3 p242, node (7)
from scipy.stats import *

n = 100
sample_mean = 1.022
sigma = 0.021

sem = sigma / (n ** 0.5)
ci = norm.interval(0.95, loc=sample_mean, scale=sem)

print(f"95% 신뢰구간 : ({round((ci[0]), 3)} < mu < {round((ci[1]), 3)}) [단위 : mm]")
```

95% 신뢰구간 : (1.018 < mu < 1.026) [단위 : mm]

In [15]:

```
# 연습문제 3 p242, node (7) + 시각화
import matplotlib.pyplot as plt
import numpy as np

x = np.linspace(1.015, 1.029, 1000)
mu = 1.022
sigma = 0.021
pdf = (1 / (sigma * np.sqrt(2 * np.pi))) * np.exp(-0.5 * ((x - mu) / sigma) ** 2)
plt.plot(x, pdf, color='blue')
plt.fill_between(x, pdf, where=(x > 1.018) & (x < 1.026), color='blue', alpha=0.3)
plt.axvline(1.018, color="red", linestyle="--")
plt.axvline(1.026, color="red", linestyle="--")
plt.title('1.018 < mu < 1.026')
plt.show()
```