1. **Separated but not sufficient:**
   Gender is independent of hyperlipidemia given age, but gender is not independent
   of age given hyperlipidemia

   - **A:** Gender
   - **C:** Hyperlipidemia
   - **Y:** Age

```
SEPERATED                                         SUFFICIENT
P(ag: ~60 | hl: YES, gd: Male) = 0.39557          P(hl: YES | ag: ~60, gd: Male) = 0.51168
P(ag: ~60 | hl: YES) = 0.39557                    P(hl: YES | ag: ~60) = 0.47549

P(ag: ~40 | hl: YES, gd: Male) = 0.35546          P(hl: NO | ag: ~60, gd: Male) = 0.48832
P(ag: ~40 | hl: YES) = 0.35546                    P(hl: NO | ag: ~60) = 0.52451

P(ag: <40 | hl: YES, gd: Male) = 0.24897          P(hl: YES | ag: ~60, gd: Female) = 0.43458
P(ag: <40 | hl: YES) = 0.24897                    P(hl: YES | ag: ~60) = 0.47549

P(ag: ~60 | hl: YES, gd: Female) = 0.39557        P(hl: NO | ag: ~60, gd: Female) = 0.56542
P(ag: ~60 | hl: YES) = 0.39557                    P(hl: NO | ag: ~60) = 0.52451

P(ag: ~40 | hl: YES, gd: Female) = 0.35546        P(hl: YES | ag: ~40, gd: Male) = 0.46432
P(ag: ~40 | hl: YES) = 0.35546                    P(hl: YES | ag: ~40) = 0.42854

P(ag: <40 | hl: YES, gd: Female) = 0.24897        P(hl: NO | ag: ~40, gd: Male) = 0.53568
P(ag: <40 | hl: YES) = 0.24897                    P(hl: NO | ag: ~40) = 0.57146

P(ag: ~60 | hl: NO, gd: Male) = 0.29712           P(hl: YES | ag: ~40, gd: Female) = 0.38867
P(ag: ~60 | hl: NO) = 0.29712                     P(hl: YES | ag: ~40) = 0.42854

P(ag: ~40 | hl: NO, gd: Male) = 0.32275           P(hl: NO | ag: ~40, gd: Female) = 0.61133
P(ag: ~40 | hl: NO) = 0.32275                     P(hl: NO | ag: ~40) = 0.57146

P(ag: <40 | hl: NO, gd: Male) = 0.38014           P(hl: YES | ag: <40, gd: Male) = 0.34014
P(ag: <40 | hl: NO) = 0.38014                     P(hl: YES | ag: <40) = 0.30842

P(ag: ~60 | hl: NO, gd: Female) = 0.29712         P(hl: NO | ag: <40, gd: Male) = 0.65986
P(ag: ~60 | hl: NO) = 0.29712                     P(hl: NO | ag: <40) = 0.69158

P(ag: ~40 | hl: NO, gd: Female) = 0.32275         P(hl: YES | ag: <40, gd: Female) = 0.27436
P(ag: ~40 | hl: NO) = 0.32275                     P(hl: YES | ag: <40) = 0.30842

P(ag: <40 | hl: NO, gd: Female) = 0.38014         P(hl: NO | ag: <40, gd: Female) = 0.72564
P(ag: <40 | hl: NO) = 0.38014                     P(hl: NO | ag: <40) = 0.69158
```

2. **Sufficient but not separated:**
   Gender is not independent of BMI given hyperlipidemia, but gender independent of
   hyperlipidemia given BMI

   - **A:** Gender
   - **C:** BMI
   - **Y:** Hyperlipidemia

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SEPERATED                                        SUFFICIENT
P(hl: YES | bmi: ~18.5, gd: Male) = 0.24111      P(bmi: ~18.5 | hl: YES, gd: Male) = 0.19853
P(hl: YES | bmi: ~18.5) = 0.21561                P(bmi: ~18.5 | hl: YES) = 0.19853

P(hl: NO | bmi: ~18.5, gd: Male) = 0.75889       P(bmi: ~24.0 | hl: YES, gd: Male) = 0.46963
P(hl: NO | bmi: ~18.5) = 0.78439                 P(bmi: ~24.0 | hl: YES) = 0.46963

P(hl: YES | bmi: ~18.5, gd: Female) = 0.189      P(bmi: ~28.0 | hl: YES, gd: Male) = 0.32815
P(hl: YES | bmi: ~18.5) = 0.21561                P(bmi: ~28.0 | hl: YES) = 0.32815

P(hl: NO | bmi: ~18.5, gd: Female) = 0.811       P(bmi: <18.5 | hl: YES, gd: Male) = 0.00368
P(hl: NO | bmi: ~18.5) = 0.78439                 P(bmi: <18.5 | hl: YES) = 0.00368

P(hl: YES | bmi: ~24.0, gd: Male) = 0.50474      P(bmi: ~18.5 | hl: YES, gd: Female) = 0.19853
P(hl: YES | bmi: ~24.0) = 0.46857                P(bmi: ~18.5 | hl: YES) = 0.19853

P(hl: NO | bmi: ~24.0, gd: Male) = 0.49526       P(bmi: ~24.0 | hl: YES, gd: Female) = 0.46963
P(hl: NO | bmi: ~24.0) = 0.53143                 P(bmi: ~24.0 | hl: YES) = 0.46963

P(hl: YES | bmi: ~24.0, gd: Female) = 0.42777    P(bmi: ~28.0 | hl: YES, gd: Female) = 0.32815
P(hl: YES | bmi: ~24.0) = 0.46857                P(bmi: ~28.0 | hl: YES) = 0.32815

P(hl: NO | bmi: ~24.0, gd: Female) = 0.57223     P(bmi: <18.5 | hl: YES, gd: Female) = 0.00368
P(hl: NO | bmi: ~24.0) = 0.53143                 P(bmi: <18.5 | hl: YES) = 0.00368

P(hl: YES | bmi: ~28.0, gd: Male) = 0.68373      P(bmi: ~18.5 | hl: NO, gd: Male) = 0.4918
P(hl: YES | bmi: ~28.0) = 0.65161                P(bmi: ~18.5 | hl: NO) = 0.4918

P(hl: NO | bmi: ~28.0, gd: Male) = 0.31627       P(bmi: ~24.0 | hl: NO, gd: Male) = 0.36267
P(hl: NO | bmi: ~28.0) = 0.34839                 P(bmi: ~24.0 | hl: NO) = 0.36267

P(hl: YES | bmi: ~28.0, gd: Female) = 0.61326    P(bmi: ~28.0 | hl: NO, gd: Male) = 0.11946
P(hl: YES | bmi: ~28.0) = 0.65161                P(bmi: ~28.0 | hl: NO) = 0.11946

P(hl: NO | bmi: ~28.0, gd: Female) = 0.38674     P(bmi: <18.5 | hl: NO, gd: Male) = 0.02607
P(hl: NO | bmi: ~28.0) = 0.34839                 P(bmi: <18.5 | hl: NO) = 0.02607

P(hl: YES | bmi: <18.5, gd: Male) = 0.10009      P(bmi: ~18.5 | hl: NO, gd: Female) = 0.4918
P(hl: YES | bmi: <18.5) = 0.08778                P(bmi: ~18.5 | hl: NO) = 0.4918

P(hl: NO | bmi: <18.5, gd: Male) = 0.89991       P(bmi: ~24.0 | hl: NO, gd: Female) = 0.36267
P(hl: NO | bmi: <18.5) = 0.91222                 P(bmi: ~24.0 | hl: NO) = 0.36267

P(hl: YES | bmi: <18.5, gd: Female) = 0.07543    P(bmi: ~28.0 | hl: NO, gd: Female) = 0.11946
P(hl: YES | bmi: <18.5) = 0.08778                P(bmi: ~28.0 | hl: NO) = 0.11946

P(hl: NO | bmi: <18.5, gd: Female) = 0.92457     P(bmi: <18.5 | hl: NO, gd: Female) = 0.02607
P(hl: NO | bmi: <18.5) = 0.91222                 P(bmi: <18.5 | hl: NO) = 0.02607
```