

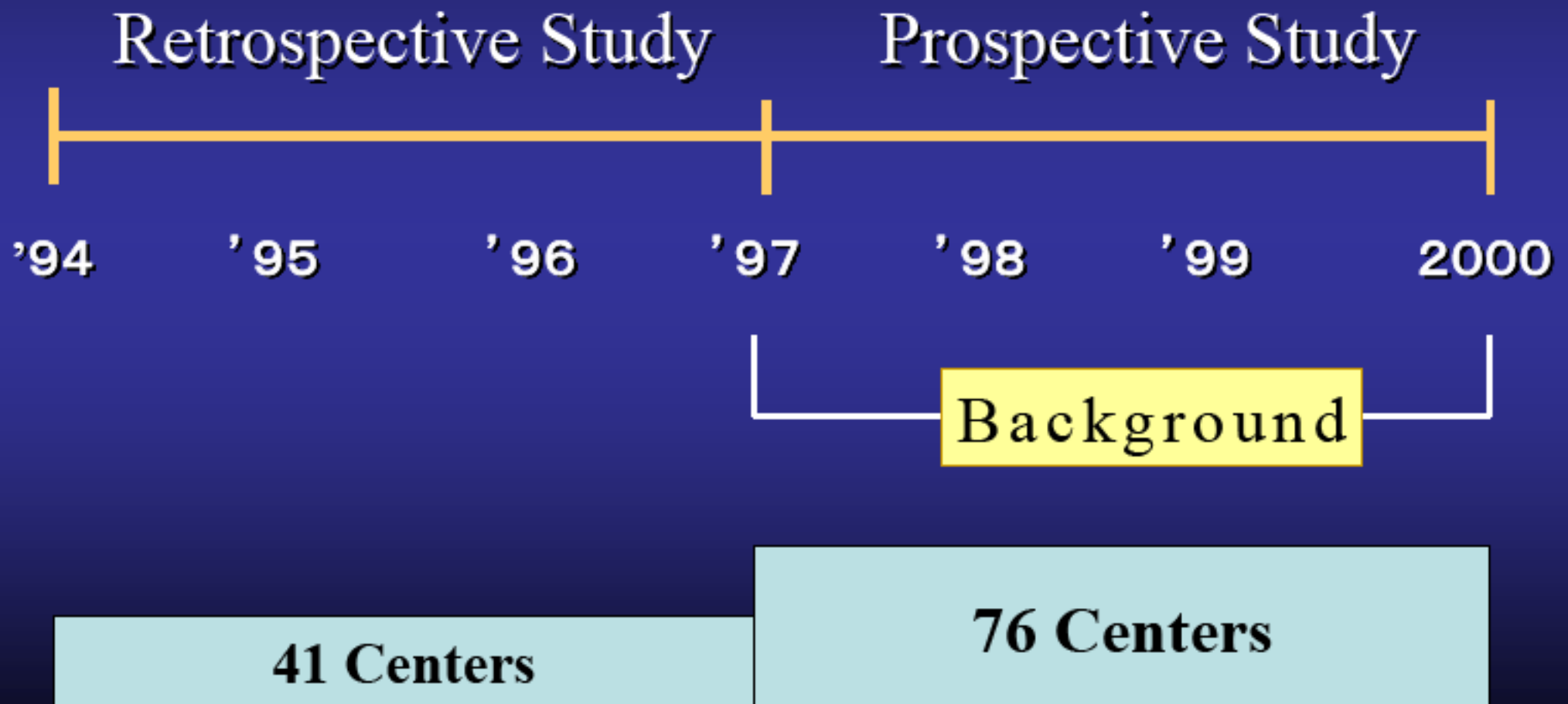
3M-Study（サンユース）

職域における心筋梗塞発症率調査
～全国多施設共同疫学研究～

サンユース学術3M-Studyプロジェクトチーム

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Study Design



3M-Study

Study Design

Diagnostic Criteria of Coronary Events
(MI and Coronary Death)

WHO MONICA project

94 95 96 97 98 99 2000

Study Population

Men : 207,310

Women : 50,130

Total : 257,440

背景調査

41 Medical centers

76 Medical centers

対象従業員数

| | Age | -29 | 30-39 | 40-49 | 50-59 | 60- | Total |
|--------------------|-------|--------|--------|--------|--------|-------|----------------|
| '94.Apr - '97.Mar | Men | 18,713 | 25,142 | 35,778 | 28,993 | 924 | 109,550 |
| | Women | 11,178 | 4,499 | 5,236 | 2,548 | 88 | 23,549 |
| | Total | 29,891 | 29,641 | 41,014 | 31,541 | 1,012 | 133,099 |
| '97.Apr - '98.Mar | Men | 37,762 | 49,680 | 67,057 | 51,011 | 1,800 | 207,310 |
| | Women | 24,731 | 11,122 | 9,500 | 4,619 | 158 | 50,130 |
| | Total | 62,493 | 60,802 | 76,557 | 55,630 | 1,958 | 257,440 |
| '98.Apr - '99.Mar | Men | 34,435 | 49,880 | 59,095 | 52,247 | 1,837 | 197,493 |
| | Women | 21,930 | 11,702 | 9,122 | 5,035 | 192 | 47,980 |
| | Total | 56,365 | 61,582 | 68,217 | 57,282 | 2,029 | 245,473 |
| '99.Apr - 2000.Mar | Men | 31,107 | 50,080 | 51,132 | 53,483 | 1,874 | 187,676 |
| | Women | 19,129 | 12,281 | 8,744 | 5,450 | 226 | 45,830 |
| | Total | 50,236 | 62,361 | 59,876 | 58,933 | 2,100 | 233,506 |

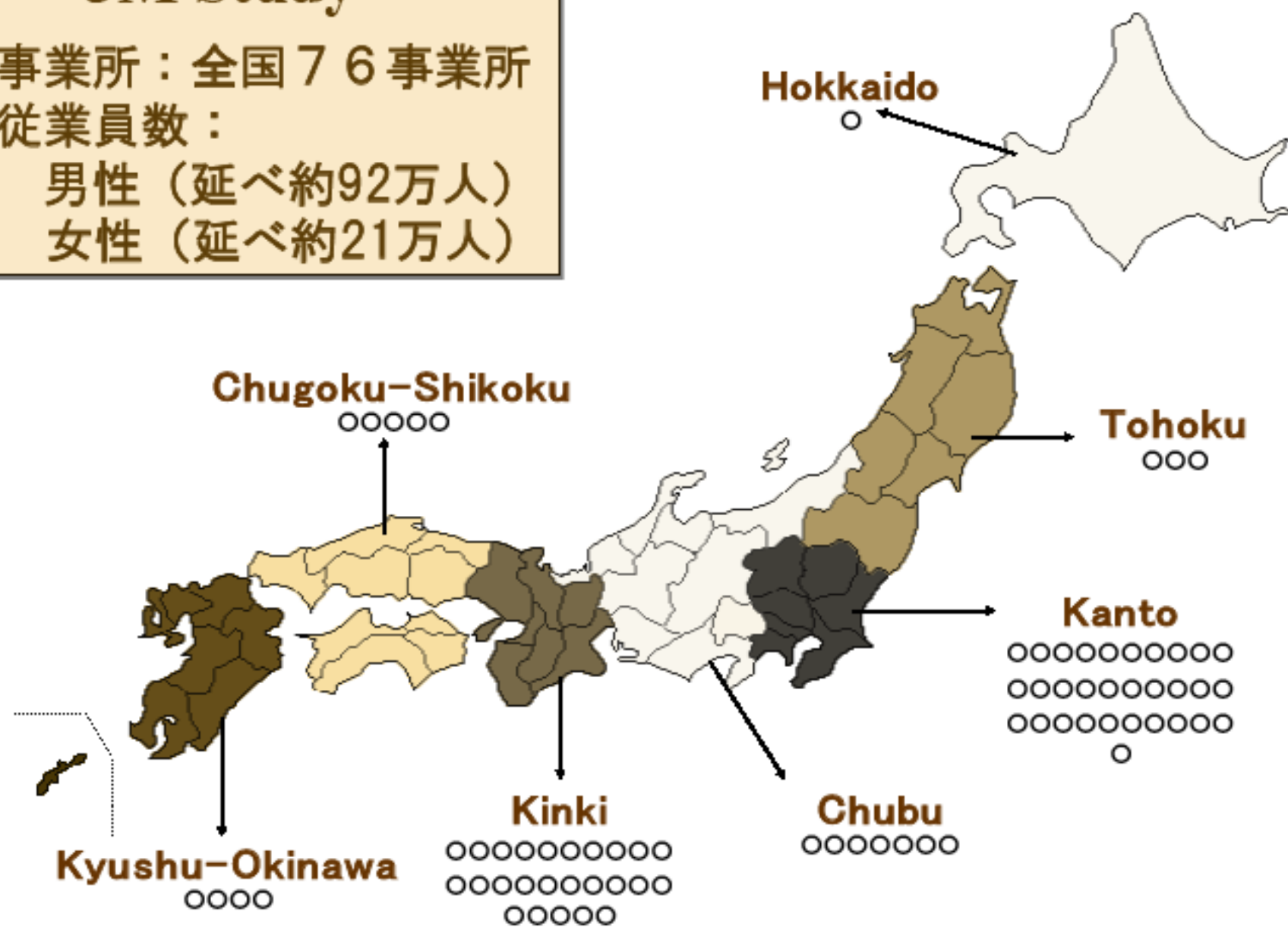
3M Study

参加事業所：全国76事業所

対象従業員数：

男性（延べ約92万人）

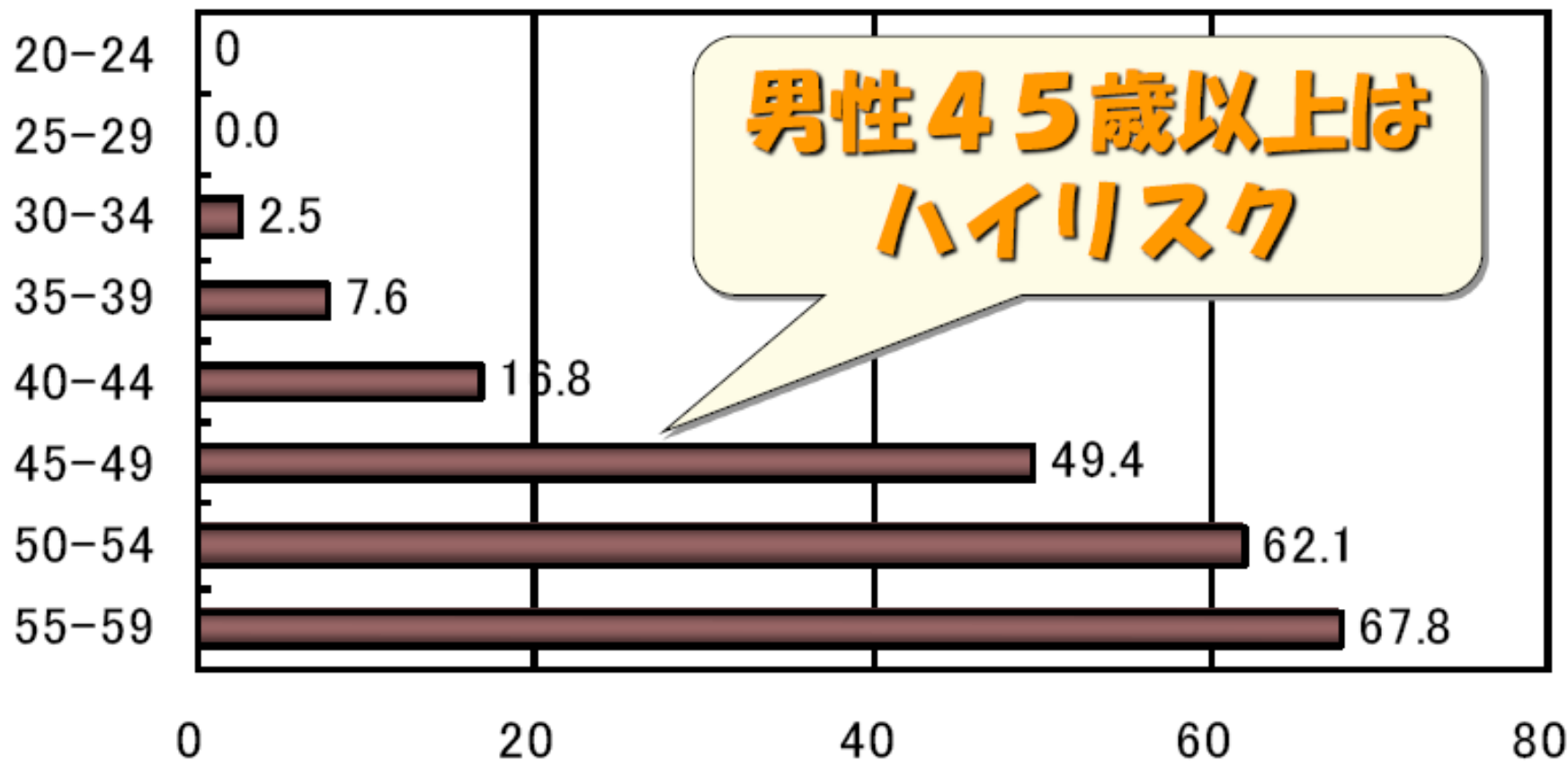
女性（延べ約21万人）



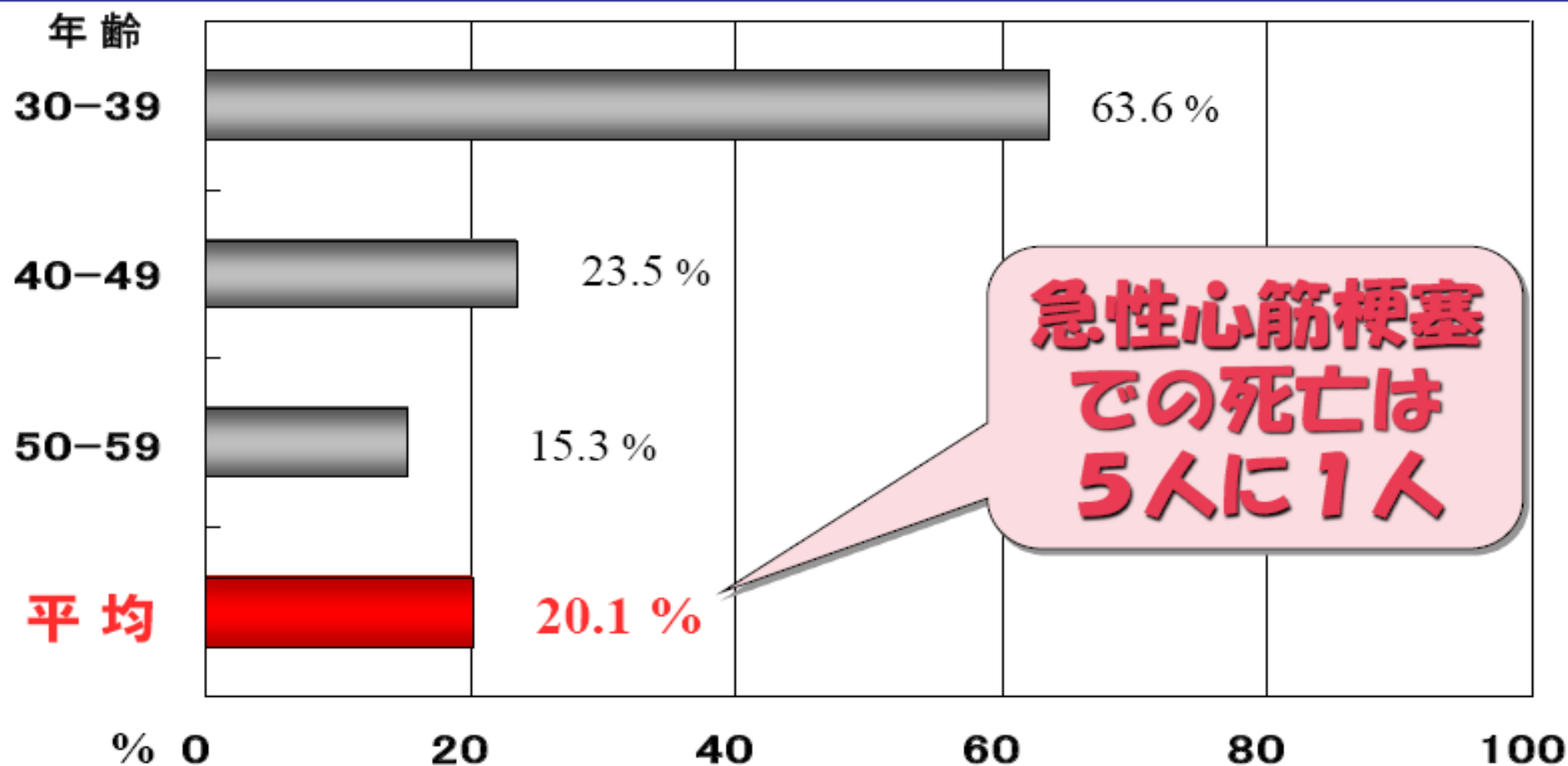
心筋梗塞＋冠動脈死の年齢別頻度 (3M-Study、サンヨー会)

年齢

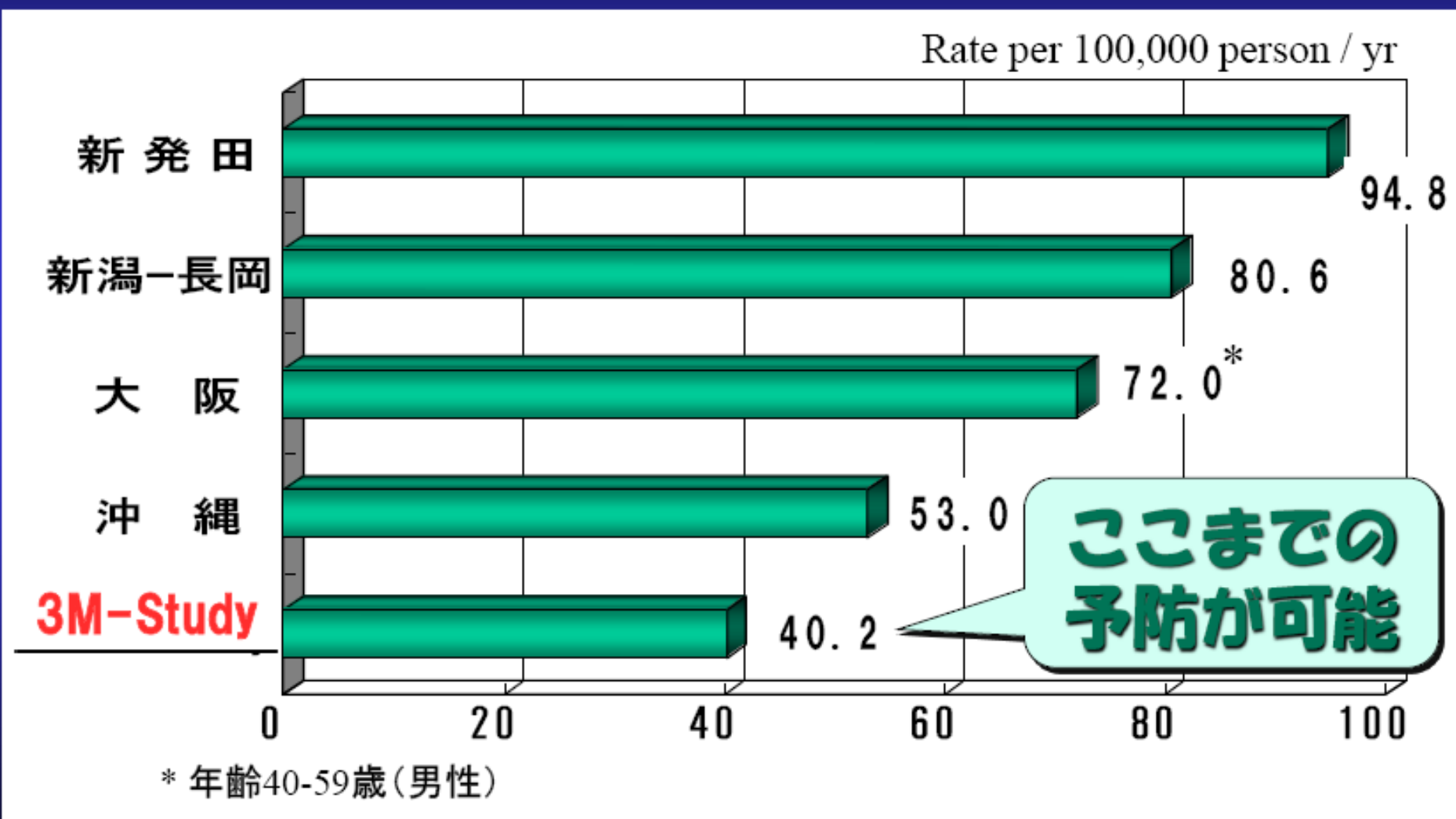
Rate per 100,000 person /yr



年齢階級別急性期死亡率 (≤28日、男性) (3M Study)



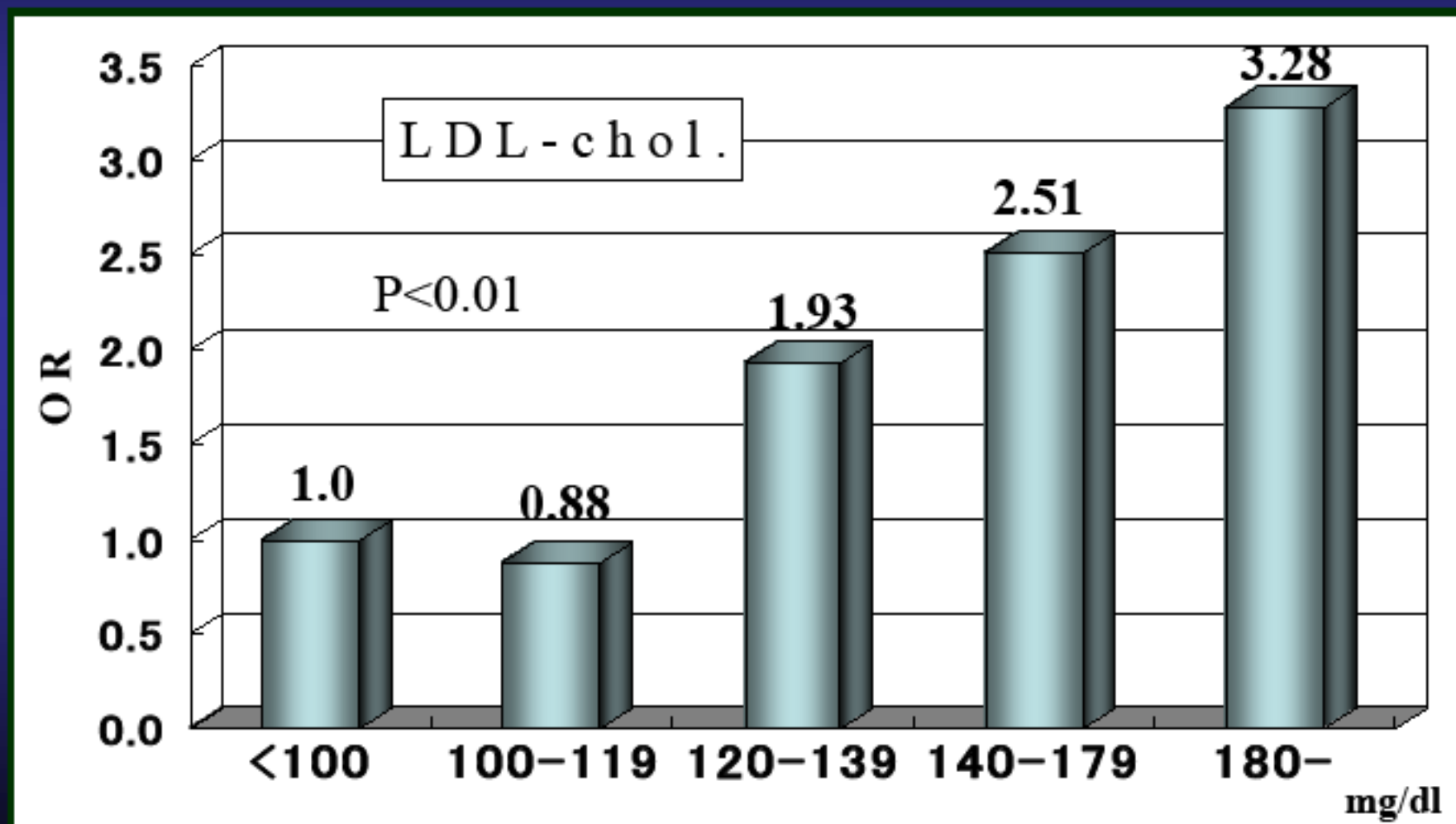
日本における心筋梗塞発症頻度の比較 (男性 : 35 - 64才)



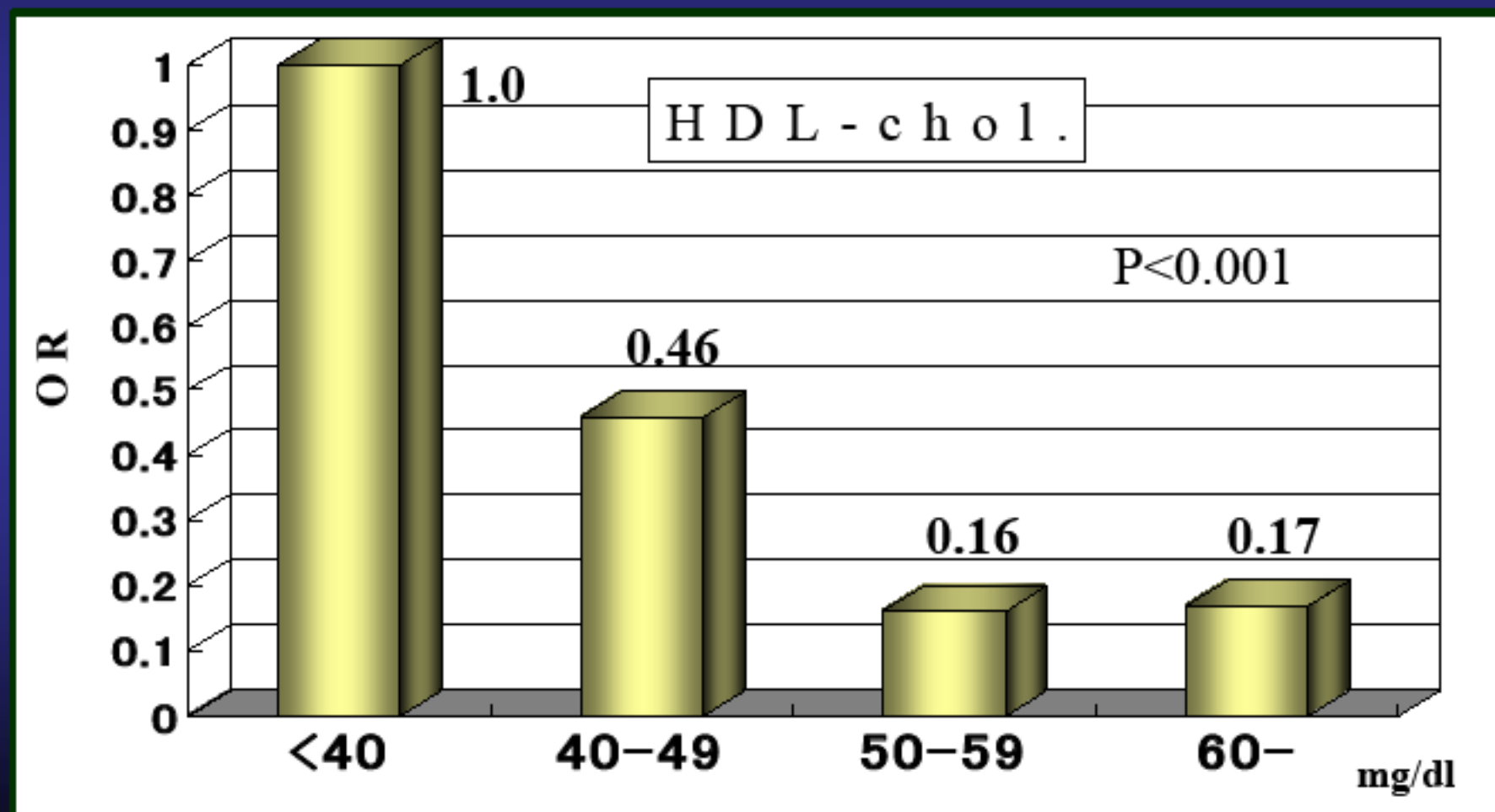
3 M-Studyにおける心筋梗塞発症率はなぜ低いのか

1. 高い定期健診受診率（97.8%）
2. 産業医、産業看護職による事後指導（生活指導など）の充実
3. 高血圧、高脂血症、糖尿病などの高い受療率
4. 大企業の社員というバイアス

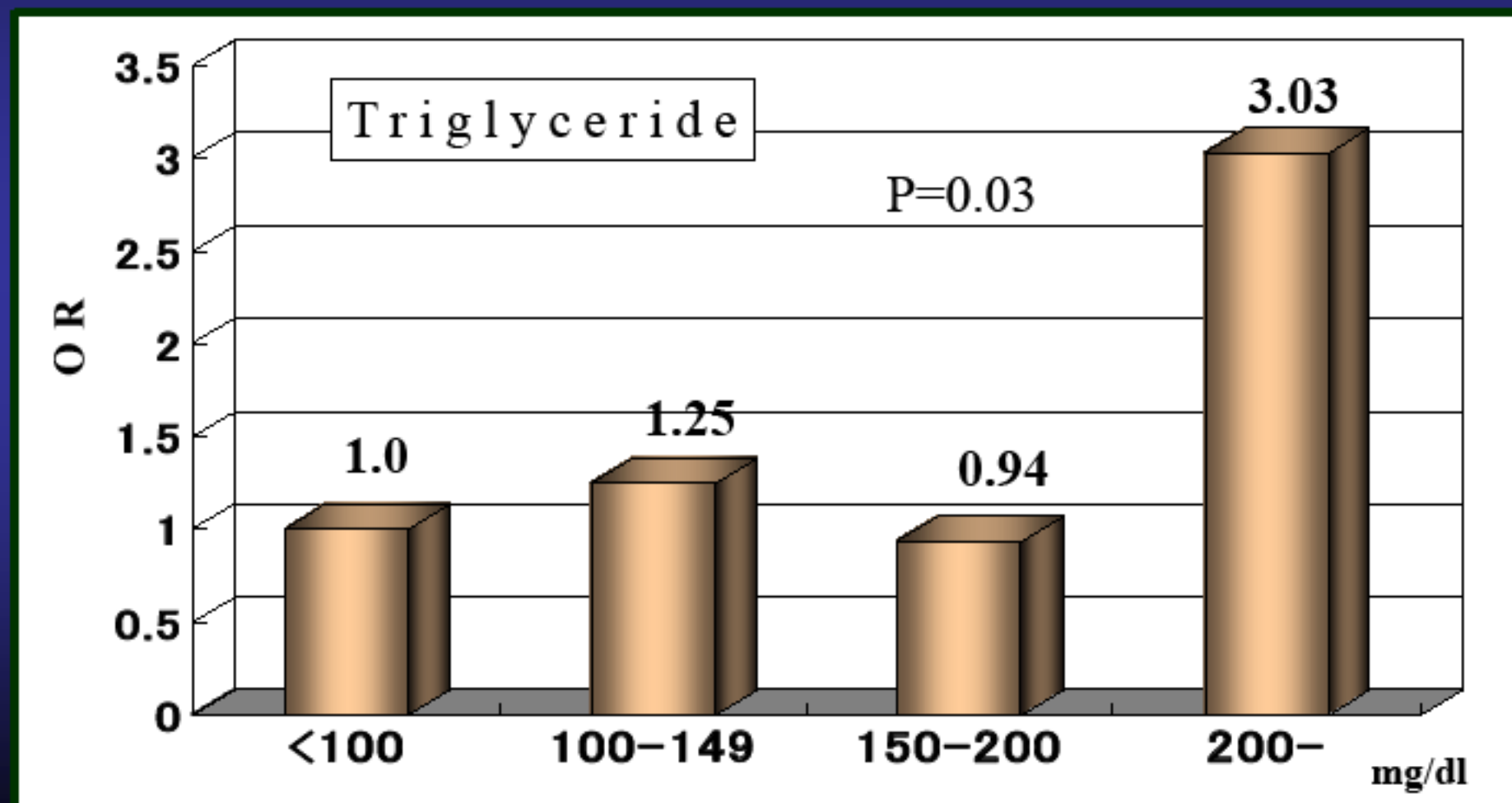
LDL-chol. と心筋梗塞発症のオッズ比 (3M-Study 男性)



HDL-cholesterol と心筋梗塞発症のオッズ比 (3M-Study 男性)

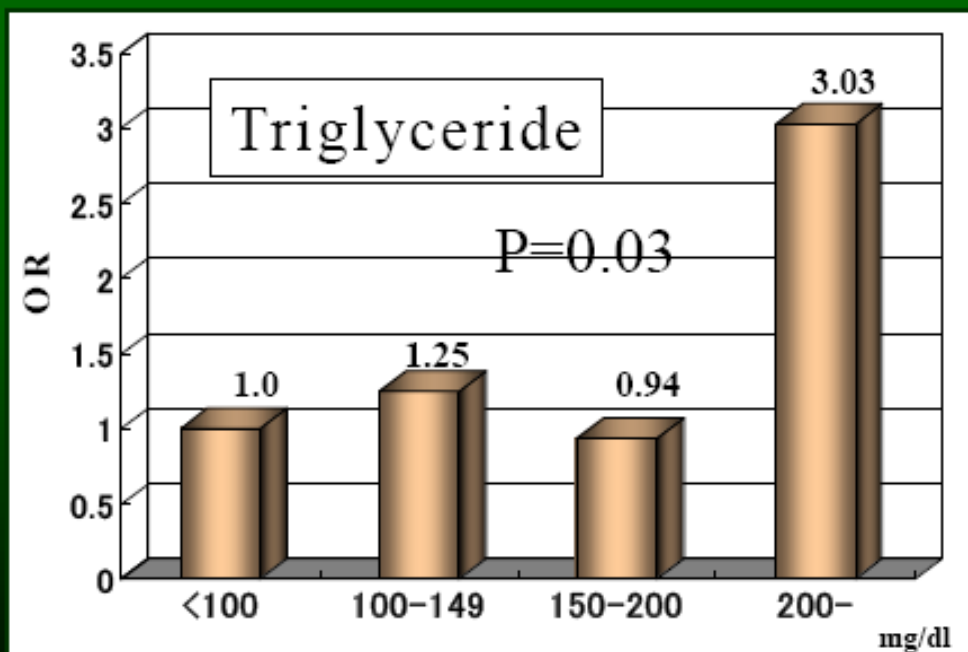
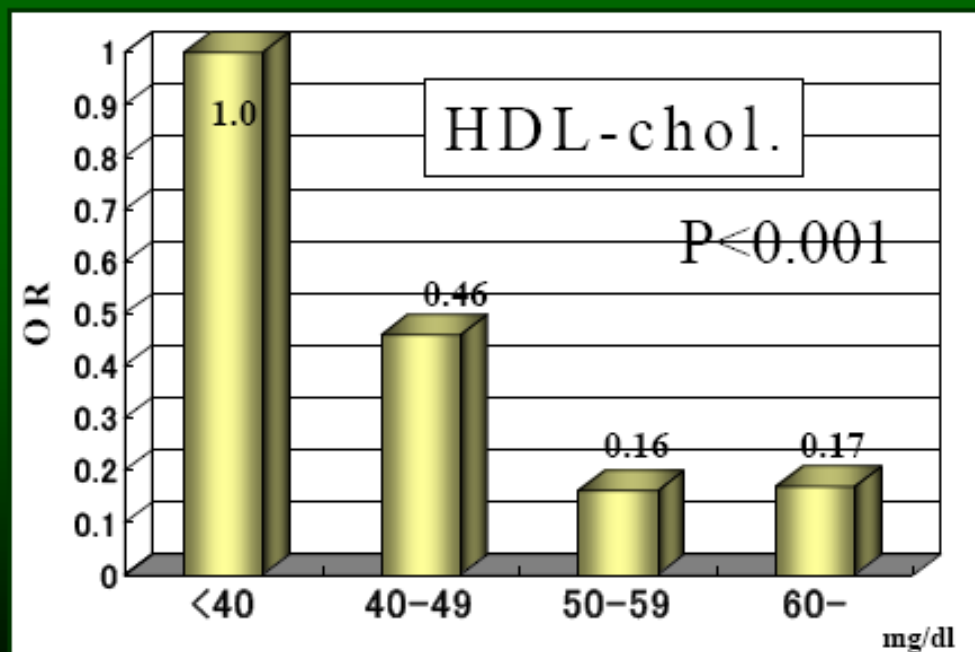
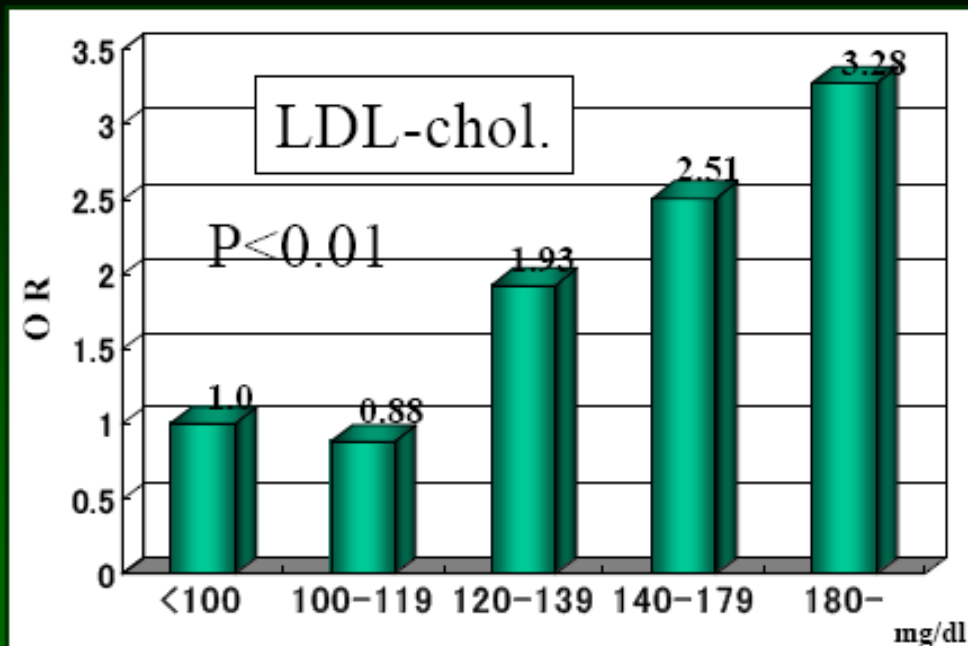


TGと心筋梗塞発症のオッズ比 (3M-Study 男性)



血清脂質値と心筋梗塞発症の相対リスク(男性)

— 3M-Study —



心筋梗塞発症者とコントロール群の比較

(男性心筋梗塞:204例 vs 対照群:408例)

— 年齢、BMI、血圧 & 空腹時血糖 —

| | Age | BMI | BP _{syst} | BP _{diast} | FPG |
|----------|----------|----------|--------------------|---------------------|------------|
| Cases | 50.4±5.3 | 23.8±2.9 | 134.1±16.6 | 82.3±11.7 | 110.3±35.8 |
| Cont. | 50.4±5.5 | 23.2±2.8 | 122.2±17.7 | 76.9±11.6 | 97.7±16.8 |
| <i>p</i> | | 0.01 | <0.0001 | <0.0001 | <0.0001 |

心筋梗塞発症者とコントロール群の比較

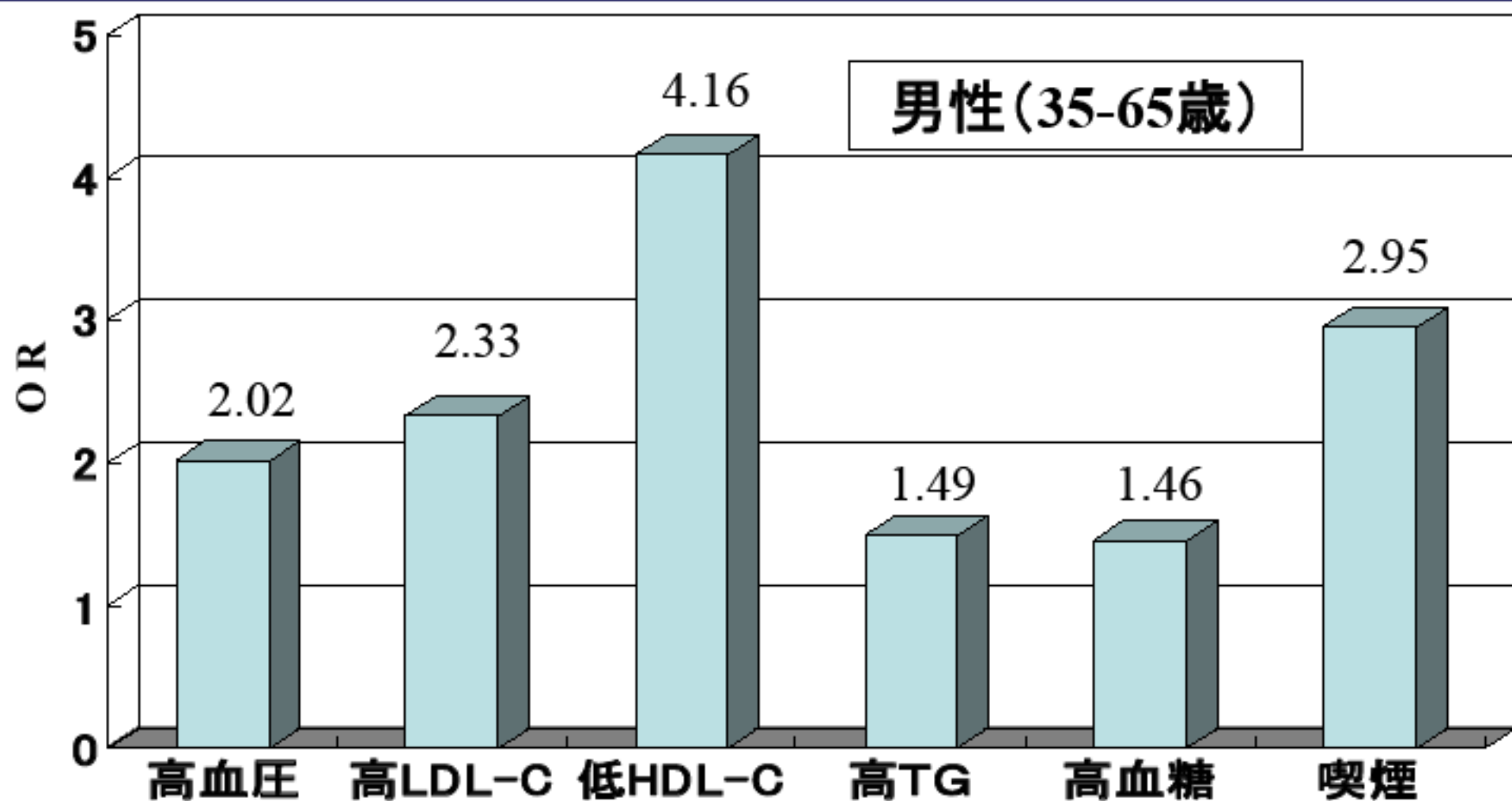
(男性心筋梗塞:204例 vs 対照群:408例)

— 脂質 & 喫煙 —

| | 総コレステロール | LDLc | HDLc | 中性脂肪 | 喫煙(+) |
|--------------|----------------------------------|----------------------------------|---------------------------------|-----------------------------------|--------------|
| Cases | 221.4\pm38.0 | 139.0\pm36.8 | 46.1\pm12.3 | 181.1\pm132.5 | 69.6% |
| Cont. | 203.5\pm32.7 | 122.3\pm30.8 | 58.1\pm13.8 | 115.9\pm72.1 | 41.4% |
| <i>p</i> | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |

心筋梗塞発症と危険因子(3M スタディ)

— 多変量調整条件付きオッズ比 —

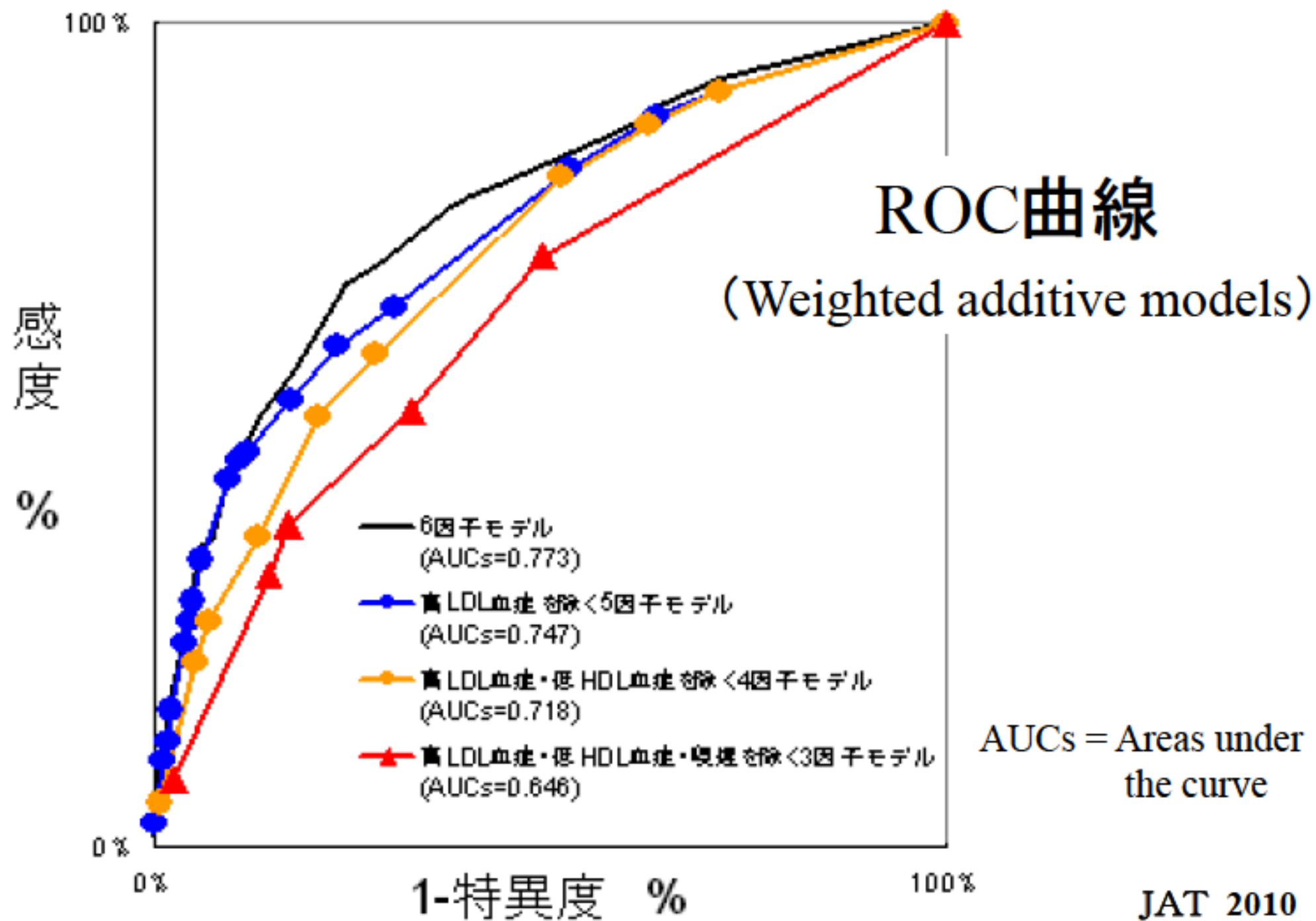


Calculation using three risk score models

| | Unweighted additive model | Weighted additive model | Weighted multiplicative model |
|--------------|--|--|--|
| 高 血 压 | +1 points | +2.0 points | X2.0 points |
| 高LDL-chol. | +1 points | +2.5 points | X2.5 points |
| 低HDL-chol. | +1 points | +4.0 points | X4.0 points |
| 高 T G | +1 points | +1.5 points | X1.5 points |
| 高 血 糖 | +1 points | +1.5 points | X1.5 points |
| 喫 煙 | +1 points | +3.0 points | X3.0 points |
| Range, point | 0-6 | 0-14.5 | 1-135 |

Age-matched and multivariable odds ratio (OR) and 95% confidence interval (95%CI) according to risk predictive models.

| | Quartiles of risk scores | | | |
|--------------------------------|--------------------------|---------------|---------------|----------------|
| | 1(Lower) | 2 | 3 | 4(Higher) |
| Weighted additive model | | | | |
| Range, point | 0 | 1.5-3.0 | 3.5-5.0 | 5.5-14.5 |
| No. of control | 97 | 134 | 78 | 99 |
| No. of case | 11 | 29 | 25 | 139 |
| Multivariable OR | 1.0 | 2.61 | 3.19 | 15.24 |
| 95%CI | | 1.12— 6.07 | 1.32— 7.73 | 6.64— 34.95 |



3M-Study 英文論文

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2. Koutatsu Maruyama, Kazuhiko Hirobe, Hiroyuki Noda, Hiroyasu Iso, Seitaro Dohi,
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