

# Diabetes and Other Risk Factors in the Gulf Cooperation Council “GCC”

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**1<sup>st</sup> EUBIROD Annual Meeting**  
**2-4 May 2009**  
**Kuwait**

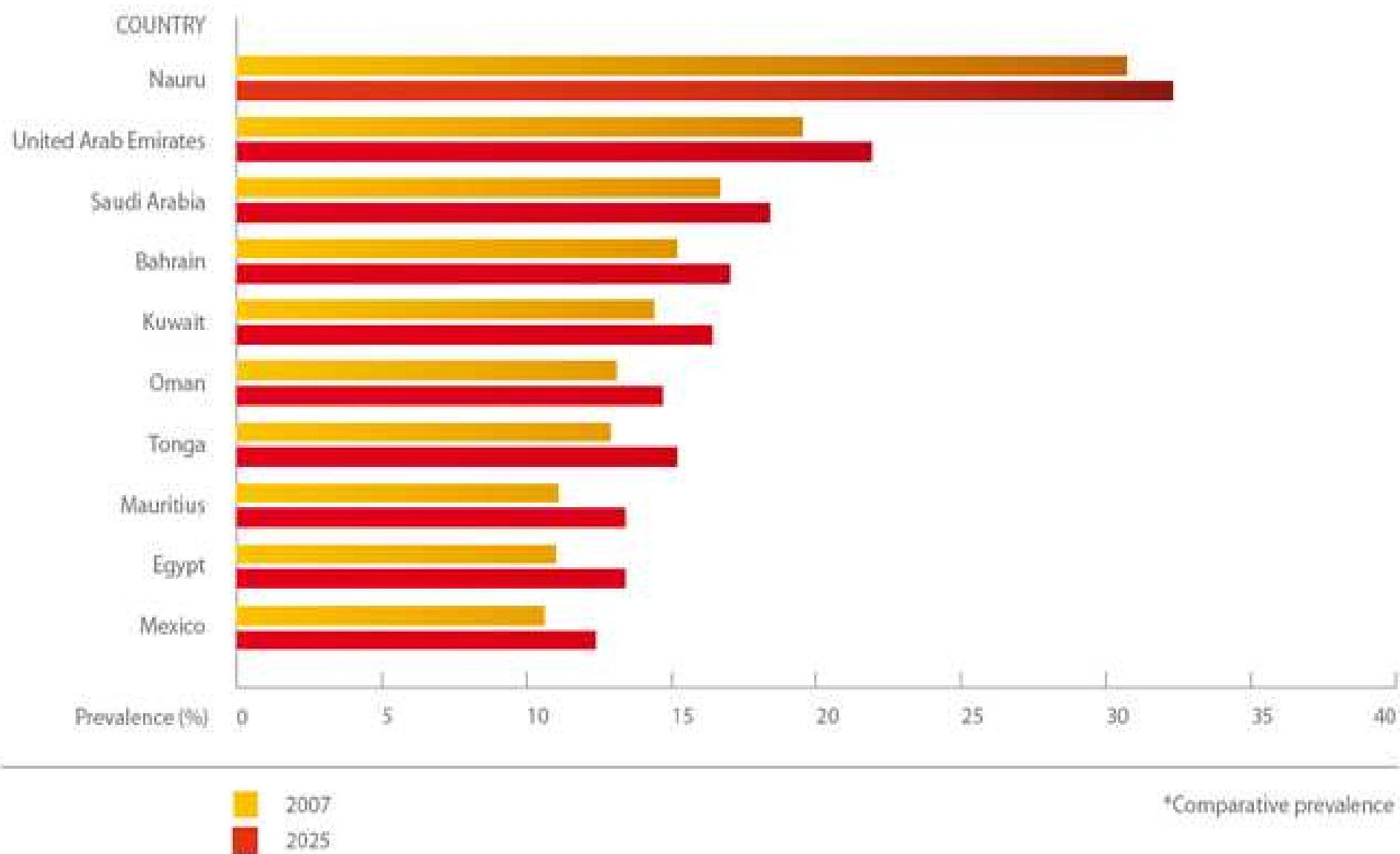
# MIDDLE EAST



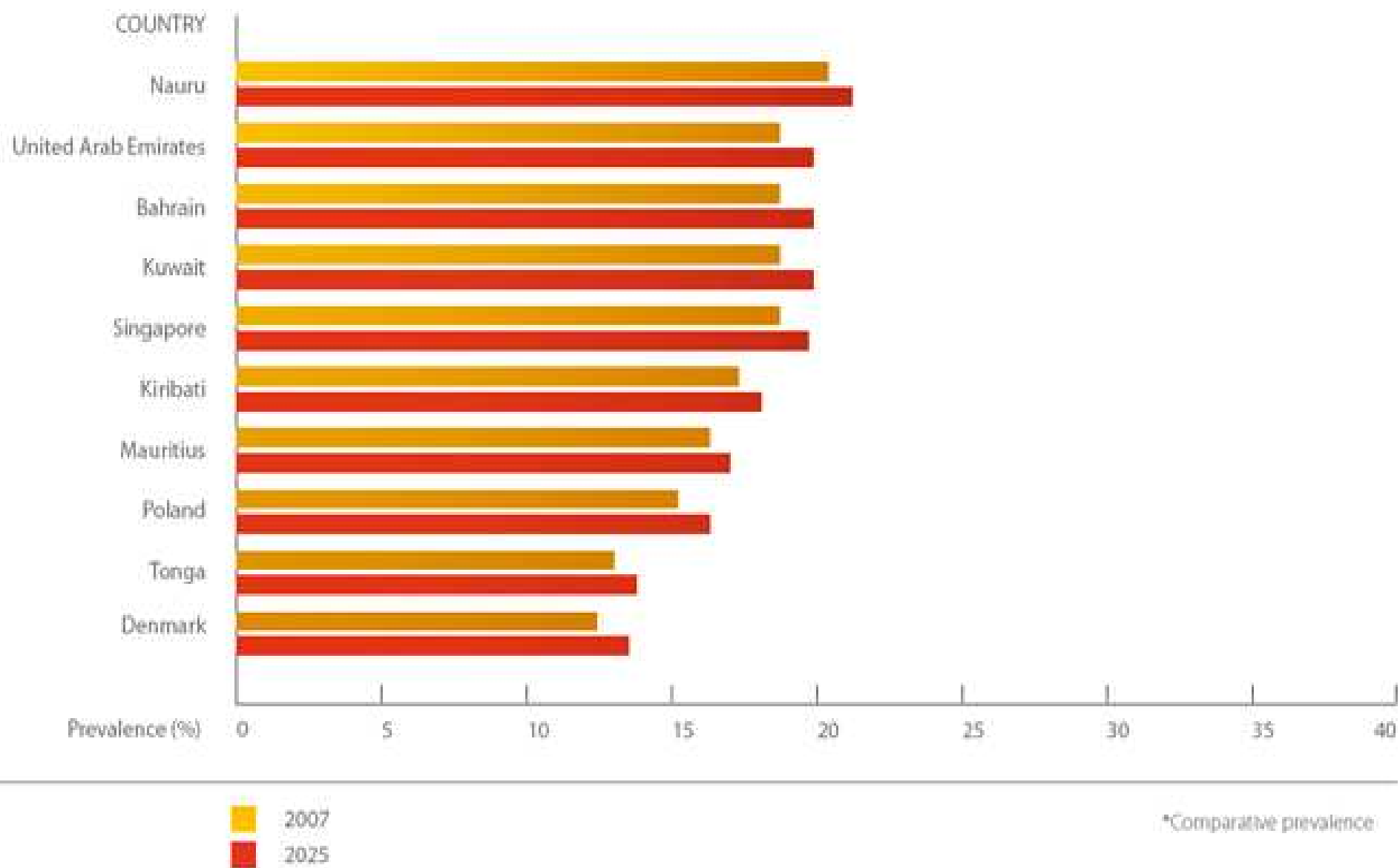
## GCC

- The Arabian Peninsula, located in the southwestern region of the Asian continent.
- 6 countries with a population of +/- 40 m
- Common economic, social and ethnic background
- world's largest oil production and reserves
- 1980–2000: Life expectancy ↑ by almost 10 years to 74y and literacy rates ↑ by 20 percentage points to about 80%
- Prevalence of diabetes, among the top 10 countries

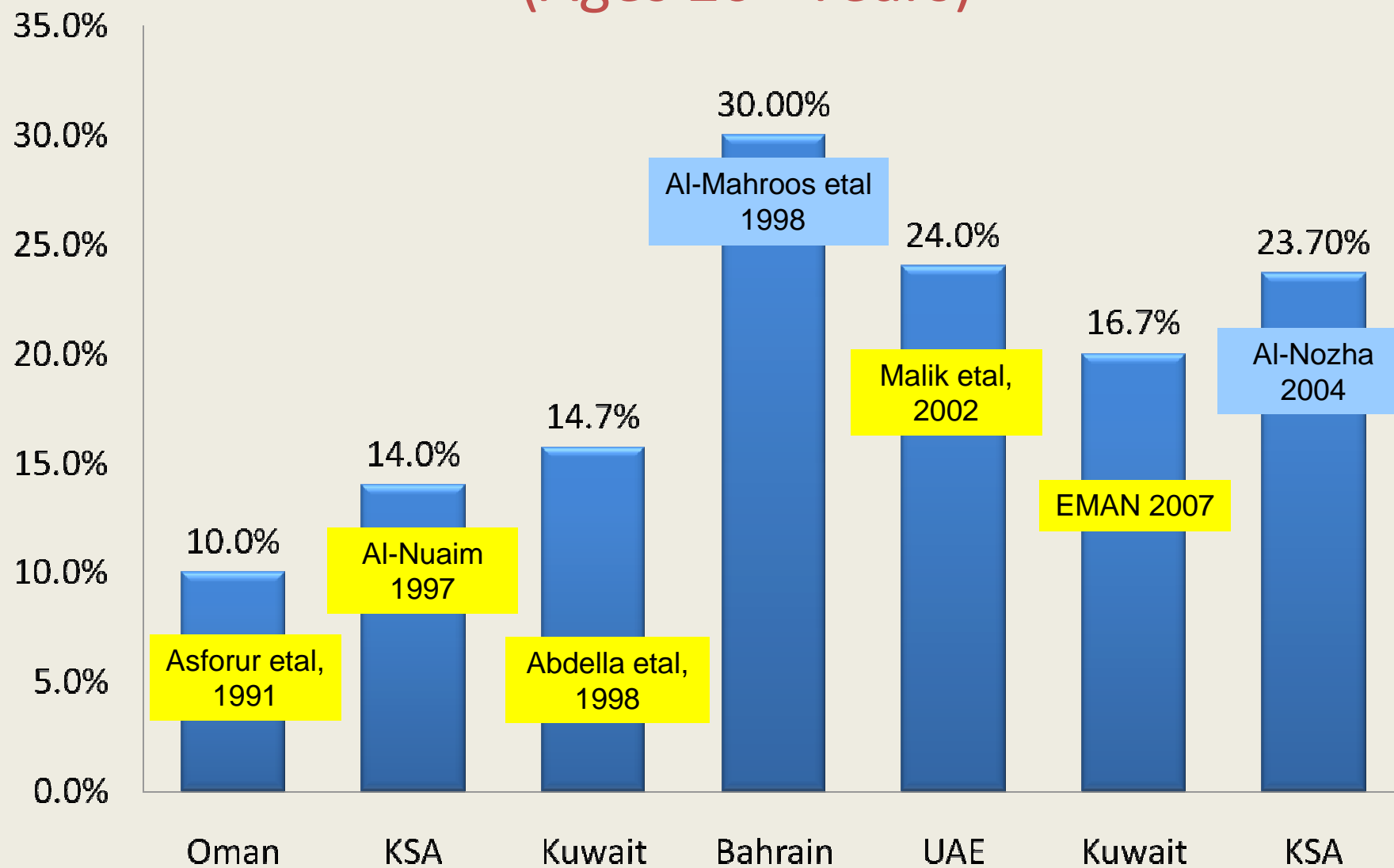
Top 10: Prevalence of diabetes\* (20-79 age group) in 2007 (with 2025 prevalence)



Top 10: Prevalence of impaired glucose tolerance\* (20-79 age group) in 2007 (with 2025 prevalence)



## Prevalence of Diabetes in GCC (Ages 20 +Years)



# Prevalence of Diabetes by age groups, Kuwait

(EMAN 2007)

| Age group (years) | Prevalence (%) |
|-------------------|----------------|
| 30-39             | 28.5           |
| 40-49             | 34.8           |
| 50-60             | 42.0           |

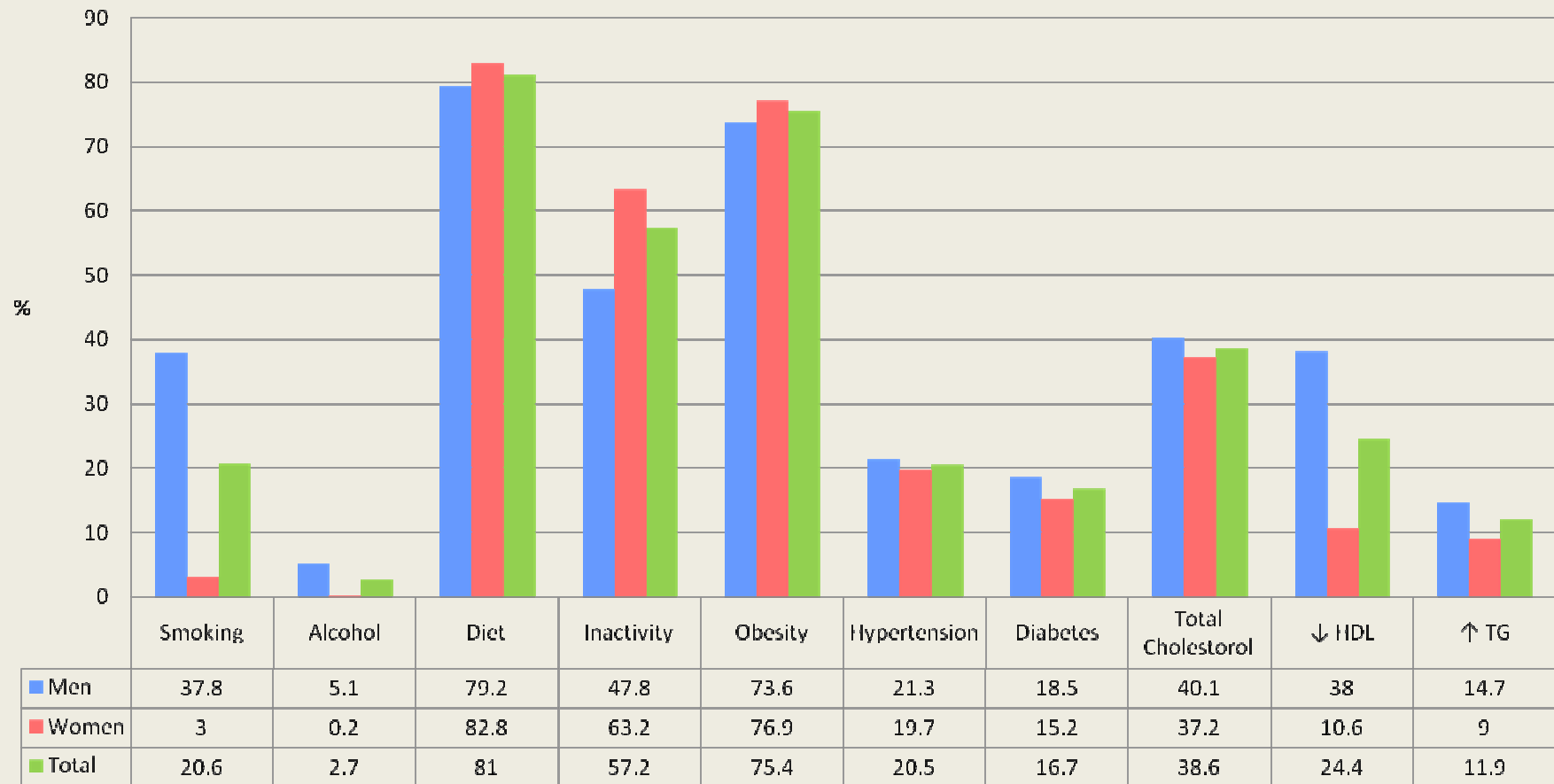
# Surveillance of risk factors for non-communicable diseases in Kuwait 2007

Eastern Mediterranean Approach for NCD “EMAN”

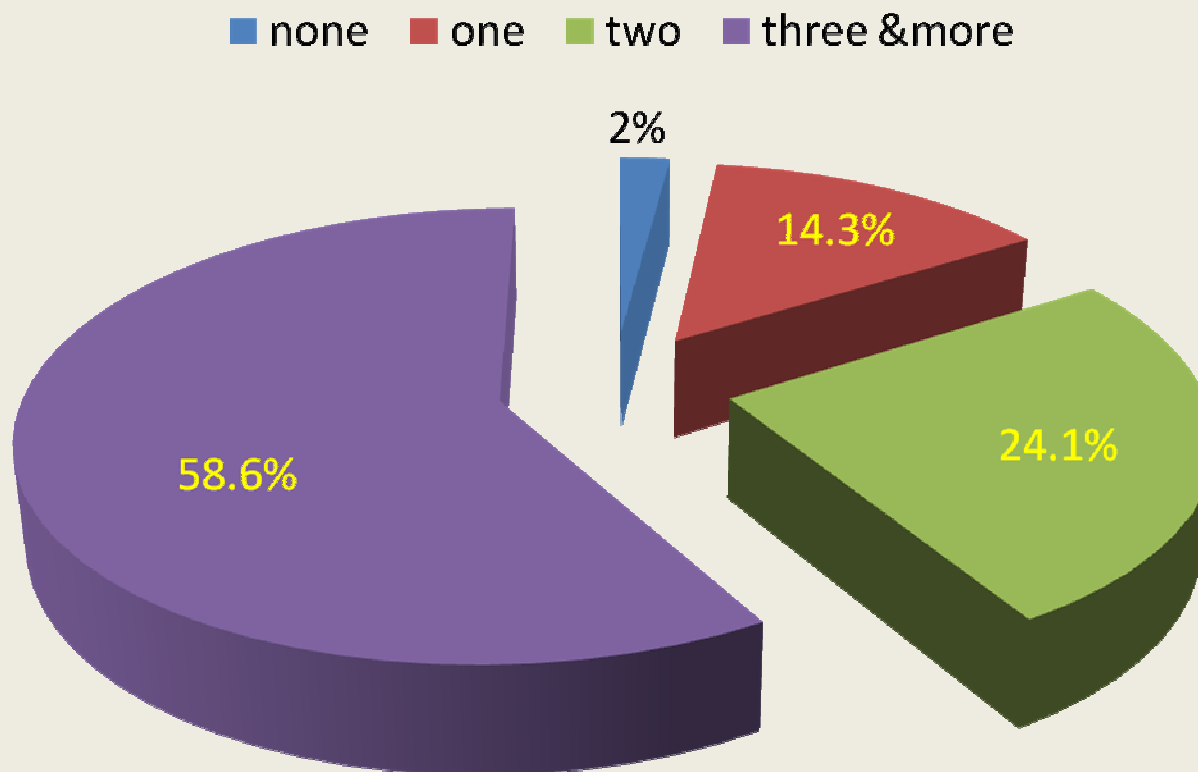
- WHO Step-wise approach
- 2280 subjects
- F: 1362 – M: 918
- Age 20-64 years



# Overall Prevalence of risk factors



## Summary of combined risk factors



## CVD and Diabetes

- Risk for atherosclerotic events is 2- 4 fold greater in diabetics than in non-diabetics
- Atherosclerosis accounts for ~65% of all diabetic mortality
  - 40% due to ischemic heart disease
  - 15% due to other heart disease
  - 10% due to cerebrovascular disease

Garber AJ. *Clin Cornerstone*. 2003;5:22-37.

Garber AJ. *Med Clin North Am*. 1998;82:931-948.

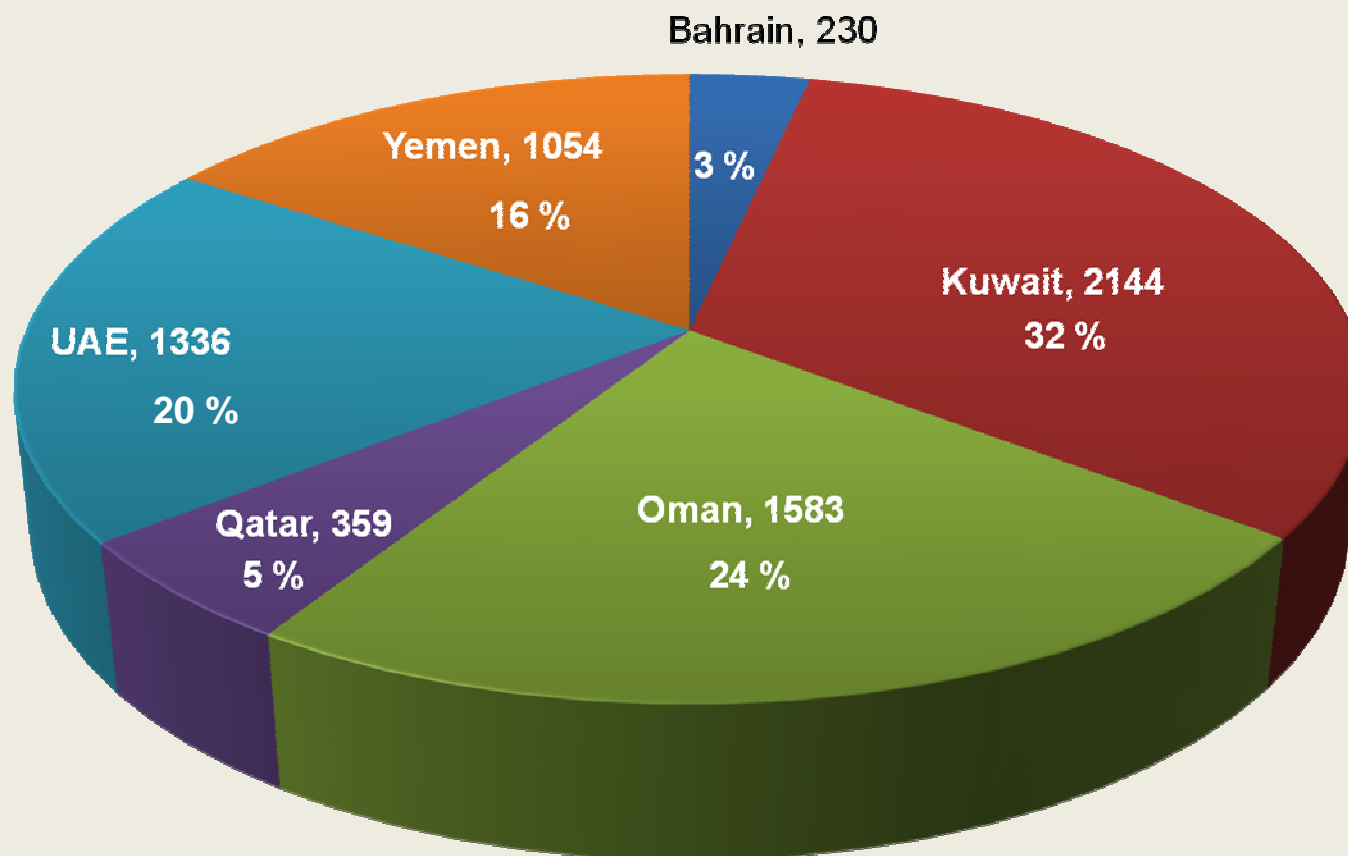
National Diabetes Data Group. *Diabetes in America*.  
2nd ed. NIH;1995.

# Gulf Registry of Acute Coronary Events



# Gulf Registry of Acute Coronary Events (Gulf RACE) 2005

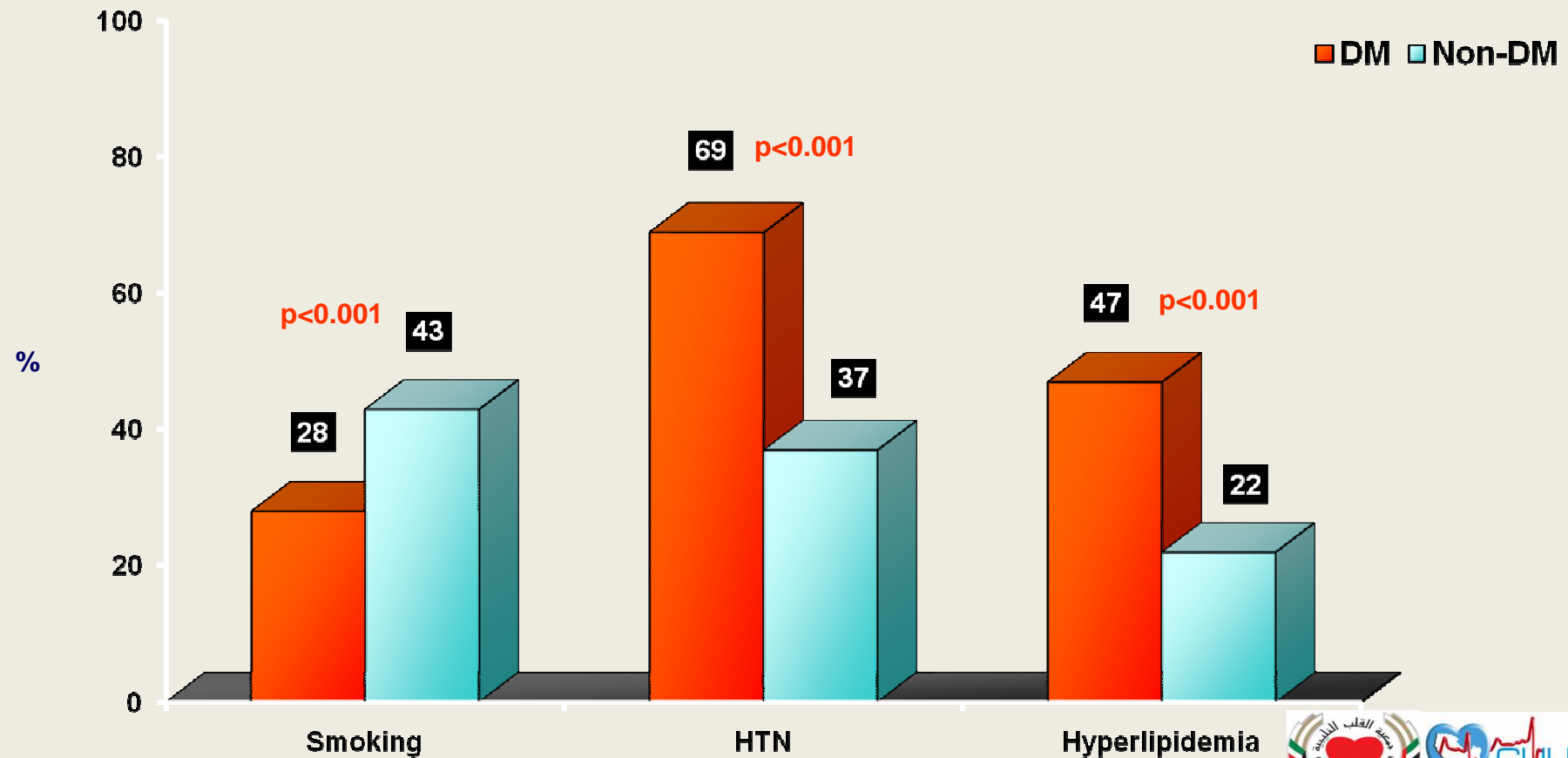
(6706 cases mean age 56.4 , 76% male)



## Risk Factors

|                      | (n=6706) |    |
|----------------------|----------|----|
|                      | No.      | %  |
| Current smoker       | 2452     | 37 |
| Sheesha only         | 297      | 5  |
| Known DM Types 1& 2  | 2745     | 41 |
| Known hypertension   | 3364     | 50 |
| Known hyperlipidemia | 2150     | 32 |

# Risk Factors



# Hospital Outcomes

|                         | DM<br>N=2745<br>% | Non-DM<br>N=3957<br>% | P-value |
|-------------------------|-------------------|-----------------------|---------|
| Recurrent ischemia      | 10                | 9                     | NS      |
| Infarction/Reinfarction | 3                 | 2                     | NS      |
| CHF                     | 21                | 14                    | < 0.001 |
| Ventilation             | 7                 | 4                     | < 0.001 |
| Cardiogenic shock       | 6                 | 5                     | 0.003   |
| Major bleed             | 0.8               | 0.8                   | NS      |
| Stroke                  | 1.1               | 0.5                   | 0.004   |



## In-hospital Mortality

| FBS > 7.5<br>N=2085<br>% | FBS ≤ 7.5<br>N=4042<br>% | P-value | Adm.BS > 11<br>N=2192<br>% | Adm. BS ≤ 11<br>N=4423<br>% | P-value |
|--------------------------|--------------------------|---------|----------------------------|-----------------------------|---------|
| 4.5                      | 1.9                      | < 0.001 | 5.9                        | 2.5                         | < 0.001 |

# Conclusions

Among Kuwaitis and GCC population

- High prevalence of:
  - Diabetes
  - Diabetes has a significant serious outcome on morbidity and mortality in patients with CVD
- Future prevention and control strategies are needed and should not overlook the importance of NCD risk factors
- Diabetes Registry is an important step toward building such strategies