

**Table 2.43 Smoking Status and Cancer Incidence/Mortality**

| <b>Smoking status</b> | <b>Outcome</b>                     | <b>Studies*</b> | <b>RR (95%CI)</b> | <b>H statistic p-value</b> |
|-----------------------|------------------------------------|-----------------|-------------------|----------------------------|
| Colorectal cancer     |                                    |                 |                   |                            |
| Current smokers       | Incidence                          | 18 (16)         | 1.17 (0.97-1.40)  | Non-significant            |
|                       | Incidence (combined <sup>1</sup> ) | 34 (22)         | 1.15 (1.00-1.32)  | Non-significant            |
|                       | Mortality                          | 5 (4)           | 1.40 (1.06-1.84)  | Non-significant            |
|                       | Mortality (combined <sup>1</sup> ) | 15 (7)          | 1.27 (1.05-1.53)  | Non-significant            |
| Former smokers        | Incidence                          | 18 (16)         | 1.25 (1.04-1.51)  | Non-significant            |
|                       | Incidence (combined <sup>1</sup> ) | 36 (22)         | 1.20 (1.04-1.38)  | Non-significant            |
|                       | Mortality                          | 6 (5)           | 1.15 (0.90-1.48)  | Non-significant            |
|                       | Mortality (combined <sup>1</sup> ) | 11 (7)          | 1.20 (0.98-1.47)  | Non-significant            |
| Colon cancer          |                                    |                 |                   |                            |
| Current smokers       | Incidence                          | 14 (11)         | 1.10 (0.89-1.36)  | Non-significant            |
|                       | Mortality                          | 6 (4)           | 1.13 (0.82-1.57)  | Non-significant            |
| Former smokers        | Incidence                          | 15 (13)         | 1.10 (0.90-1.35)  | Non-significant            |
|                       | Mortality                          | 4 (3)           | 1.27 (0.86-1.89)  | Non-significant            |
| Rectal cancer         |                                    |                 |                   |                            |
| Current smokers       | Incidence                          | 14 (11)         | 1.19 (0.94-1.52)  | Non-significant            |
|                       | Mortality                          | 5 (3)           | 1.23 (0.84-1.81)  | Non-significant            |
| Former smokers        | Incidence                          | 15 (13)         | 1.20 (0.94-1.53)  | Non-significant            |

\* For Studies, the number not enclosed by parentheses indicates the number of individual risk estimates that were pooled; the number of distinct studies is shown in parentheses. The H statistic is a test of heterogeneity, where  $p < 0.05$  is significant and indicates the presence of heterogeneity. Two-sided p-values  $< 0.05$  are shown in bold.

<sup>1</sup> Combined results consist of CRC, colon cancer, and rectal cancer data.

**Table 2.43b Dose-Response Analyses of Daily Cigarette Consumption, Duration of Smoking, Pack-Years and Age of Initiation**

| Variable          | Outcome               | Studies | RR of moderate exposure <sup>1</sup> | RR of high exposure <sup>2</sup> | <i>p</i> value  |
|-------------------|-----------------------|---------|--------------------------------------|----------------------------------|-----------------|
| Colorectal cancer |                       |         |                                      |                                  |                 |
| Cigarettes/day    | Incidence             | 11      | 1.175                                | 1.380                            | < <b>0.0001</b> |
|                   | Incidence (combined)* | 14      | 1.137                                | 1.293                            | < <b>0.0001</b> |
|                   | Mortality             | 4       | 1.407                                | 1.980                            | < <b>0.0001</b> |
|                   | Mortality (combined)* | 5       | 1.410                                | 1.989                            | < <b>0.0001</b> |
| Duration (yrs)    | Incidence             | 8       | 1.094                                | 1.197                            | < <b>0.0001</b> |
|                   | Incidence (combined)* | 10      | 1.087                                | 1.181                            | < <b>0.0001</b> |
| Pack-years        | Incidence             | 5       | 1.269                                | 1.505                            |                 |
|                   | Incidence (combined)* | 8       | 1.239                                | 1.445                            | < <b>0.0001</b> |
| Age at Initiation | Incidence             | 6       | 0.978 (0.022)                        | 0.956 (0.044)                    | < <b>0.0001</b> |
|                   | Incidence (combined)* | 7       | 0.979 (0.021)                        | 0.958 (0.042)                    | < <b>0.0001</b> |
| Colon cancer      |                       |         |                                      |                                  |                 |
| Cigarettes/day    | Incidence             | 6       | 1.030                                | 1.060                            | 0.61            |
| Duration (yrs)    | Incidence             | 3       | 0.971                                | 0.943                            | 0.46            |
| Pack-years        | Incidence             | 4       | 1.022                                | 1.045                            | 0.99            |
| Rectal cancer     |                       |         |                                      |                                  |                 |
| Cigarettes/day    | Incidence             | 6       | 1.131                                | 1.279                            | 0.07            |
| Duration (yrs)    | Incidence             | 3       | 1.135                                | 1.288                            | <b>0.0004</b>   |
| Pack-years        | Incidence             | 4       | 1.184                                | 1.401                            | 0.07            |

\* Combined results consist of CRC, colon cancer, and rectal cancer data. For the dose-response relationship between age of initiation and colorectal cancer incidence, the reduction in RR is shown in parentheses. Two-sided *p*-values <0.001 are shown in bold.

<sup>1</sup> RR of moderate exposure is defined as follows: increase of 20 cigarettes/day, increase of 20 years in duration, increase in 35 pack-years and delay of 5 years in smoking initiation.

<sup>2</sup> RR of high exposure is defined as follows: increase of 40 cigarettes/day, increase of 40 years in duration, increase in 60 pack-years and delay of 10 years in smoking initiation