

Table 2.4. Case-control studies of chewing betel quid and cancer of the oral cavity published after IARC (1985) – dose-response analyses

| Reference | Sex | With/without tobacco | Unit | Item | OR | 95% CI | Covariates | p for trend | | |
|---------------------------------|---------|----------------------|---------------------|--------------|--------|--------------|---|-------------------------|-----------|-------------------------|
| Nandakumar <i>et al.</i> (1990) | Both | With | <i>daily amount</i> | 1-4 | 9.3 | 4.9-17.5 | none | <0.001 | | |
| | | | | 5-9 | 12.8 | 6.6-25 | | | | |
| | | | | 10+ | 16.6 | 6.3-44.3 | | | | |
| | | | | <i>years</i> | 1-5 | 1.7 | | | 0.3-9.3 | <0.001 |
| | | | | | 6-15 | 10.3 | | | 3.6-29.6 | |
| | | | | | 16-25 | 12.4 | | | 5.6-27.2 | |
| | | | | | 26+ | 15.95 | | | 8.4-30.2 | |
| Dikshit & Kanhere (2000) | Men | With | <i>daily amount</i> | 1-5 | 2 | 1-3.8 | age, smoking | NS | | |
| | | | | 6-10 | 6.7 | 3.7-12.1 | | | | |
| | | | | 11+ | 13.9 | 7.1-27.2 | | | | |
| | | | | <i>years</i> | 1-20 | 1.1 | | | 0.5-2.4 | Significant |
| | | | | | 21-30 | 5.5 | | | 2.9-10.6 | |
| | | | | | 31+ | 23.9 | | | 12-47.3 | |
| | | | | | | | | | | |
| Balaram <i>et al.</i> (2002) | Men | With and without | <i>daily amount</i> | 0-4 | 3.06 | 1.58-5.91 | age, centre, education, chewing, smoking(men), alcohol drinking | <0.001 | | |
| | | | | 5-9 | 8.15 | 3.93-16.9 | | | | |
| | | | | 10+ | 7.91 | 3.23-19.41 | | | | |
| | Females | | | 0-4 | 22.1 | 10.06-48.52 | | | <0.001 | |
| | | | | 5-9 | 58.58 | 26.61-128.99 | | | | |
| | | | | 10+ | 112.41 | 30.85-409.55 | | | | |
| Znaor <i>et al.</i> (2003) | Males | With and without | <i>daily amount</i> | 1-3 | 2.06 | 1.68-2.53 | age, centre, education, alcohol drinking, smoking | Significant (not given) | | |
| | | | | 4-5 | 6.02 | 4.7-7.72 | | | | |
| | | | | 6+ | 11.94 | 8.93-15.96 | | | | |
| | | | | <i>years</i> | 0-19 | 3.11 | | | 2.51-3.86 | Significant (not given) |
| | | | | | 20-39 | 5.31 | | | 4.32-6.52 | |
| | | | | | 40+ | 5.19 | | | 3.7-7.29 | |

Table 2.4. Case-control studies of chewing betel quid and cancer of the oral cavity published after IARC (1985) – dose-response analyses

| Reference | Sex | With/without tobacco | Unit | Item | OR | 95% CI | Covariates | p for trend |
|--|-------|----------------------|---------------------|-------|-------------|-------------|------------|-------------|
| Sankaranarayanan <i>et al.</i> (1989a) | Men | With | <i>daily amount</i> | 0-4 | 5.95 | 2.99-11.84 | none | <0.001 |
| | | | | 5-9 | 6.85 | 3.65-12.88 | | |
| | | | | 10+ | 15.07 | 7.83-28.99 | | |
| | Women | With | | 0-4 | 6.62 | 2.48-17.66 | | <0.001 |
| | | | | 5-9 | 18.53 | 7.18-47.79 | | |
| | | | | 10+ | 13.69 | 4.41-42.49 | | |
| | Men | With | <i>years</i> | 0-10 | 5.82 | 1.63-20.66 | | <0.001 |
| | | | | 11-20 | 2.87 | 1.21-6.77 | | |
| | | | | 21-30 | 4.95 | 2.27-10.75 | | |
| | | | | 31-40 | 13.64 | 6.72-26.67 | | |
| | | | | 41+ | 32.06 | 13.93-73.78 | | |
| | Women | With | <i>years</i> | 0-10 | 2.44 | 0.63-9.28 | | <0.001 |
| 11-20 | | | | 5.9 | 1.97-17.6 | | | |
| 21-30 | | | | 9.3 | 3.25-26.57 | | | |
| 31-40 | | | | 32.33 | 10.62-98.43 | | | |
| 41+ | | | | 54.23 | 16.3-180.4 | | | |

Table 2.4. Case-control studies of chewing betel quid and cancer of the oral cavity published after IARC (1985) – dose-response analyses

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|--|-------|----------------------|---------------------|-------|-------|--------|------------|-------------|-------|
| Sankaranarayanan <i>et al.</i> (1989b) | Men | With | <i>daily amount</i> | 0-4 | 4 | 2.15- | none | <0.001 | |
| | | | | 5-9 | 2.92 | 1.6- | | | 7.46 |
| | | | | 10+ | 5.52 | 2.85- | | | 5.3 |
| | Women | With | <i>daily amount</i> | 0-4 | 5.83 | 2.23- | | <0.001 | |
| | | | | 5-9 | 6.63 | 2.47- | | | 15.22 |
| | | | | 10+ | 9.27 | 3.11- | | | 17.74 |
| | Men | With | <i>years</i> | 0-10 | 3.87 | 1.16- | | <0.001 | |
| | | | | 11-20 | 1.68 | 0.71- | | | 12.79 |
| | | | | 21-30 | 4.62 | 2.36- | | | 3.96 |
| | | | | 31-40 | 5.2 | 2.53- | | | 9.03 |
| | | | | 41+ | 5.59 | 2.25- | | | 10.68 |
| | Women | With | <i>years</i> | 0-10 | 7.58 | 1.97- | | <0.001 | |
| | | | | 11-20 | 3.5 | 1.13- | | | 29.07 |
| | | | | 21-30 | 4.56 | 1.51- | | | 10.81 |
| 31-40 | | | | 15.85 | 3.64- | 13.79 | | | |
| 41+ | | | | 18.3 | 4.69- | 68.98 | | | 71.39 |

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|--|-------|----------------------|---------------------|-------|--------|--------|------------|--|-----------|
| Sankaranarayanan <i>et al.</i> (1990b) | Men | With | <i>daily amount</i> | 0-4 | 9.33 | 5.6- | 15.22 | none | <0.001 |
| | | | | 5-9 | 9.04 | 5.65- | 14.46 | | |
| | | | | 10+ | 16.36 | 9.66- | 27.7 | | |
| | Women | With | <i>daily amount</i> | 0-4 | 3.71 | 1.99- | 6.99 | | <0.001 |
| | | | | 5-9 | 10.83 | 5.96- | 19.62 | | |
| | | | | 10+ | 14.24 | 6.86- | 29.5 | | |
| | Men | With | <i>years</i> | 0-10 | 6.9 | 2.83- | 16.81 | | <0.001 |
| | | | | 11-20 | 5.8 | 3.33- | 10.11 | | |
| | | | | 21-30 | 7.7 | 4.43- | 13.38 | | |
| | | | | 31-40 | 13.24 | 7.51- | 23.32 | | |
| | | | | 41+ | 37.75 | 19.49- | 73.12 | | |
| | Women | With | <i>years</i> | 0-10 | 1.79 | 0.78- | 4.07 | | <0.001 |
| 11-20 | | | | 3.8 | 1.85- | 7.75 | | | |
| 21-30 | | | | 7.74 | 4- | 15 | | | |
| 31-40 | | | | 21.3 | 9.59- | 47.36 | | | |
| 41+ | | | | 54.93 | 21.18- | 142.42 | | | |
| Lu <i>et al.</i> (1996) | Both | With | <i>daily amount</i> | 1-9 | 26.4 | 2.9- | 239.7 | age, sex, education, area, alcohol drinking, smoking | Not given |
| | | | | 10-20 | 51.2 | 6.2- | 423.4 | | |
| | | | | 21+ | 275.6 | 14.8- | 5106.5 | | |
| | Both | With | <i>years</i> | 1-20 | 12.9 | 1.3- | 128.1 | | Not given |
| | | | | 21-40 | 93.7 | 10.1- | 868 | | |
| | | | | 41+ | 397.5 | 19.5- | 8120.2 | | |

Table 2.4. Case-control studies of chewing betel quid and cancer of the oral cavity published after IARC (1985) – dose-response analyses

| Reference | Sex | With/without tobacco | Unit | Item | OR | 95% CI | Covariates | p for trend | |
|-----------------------------|------|----------------------|---------------------|-----------|-------|--------|------------|--|-----------------|
| Wasnik <i>et al.</i> (1998) | Both | With and without | <i>daily amount</i> | 1-2 | 1.72 | 0.56- | 5.37 | none | |
| | | | | 3-5 | 2.44 | 1.08- | 5.52 | | |
| | | | | 6-10 | 8.19 | 3.73- | 17.99 | | |
| | | | | 11+ | 20.02 | 8.15- | 48.98 | | |
| | | | | overnight | 35.88 | 13.38- | 95.53 | | |
| | Both | With and without | <i>years</i> | 0-19 | 1.78 | 0.72- | 4.42 | | |
| | | | | 20-40 | 12.78 | 7.04- | 23.2 | | |
| | | | | 41+ | 8.1 | 4.02- | 16.31 | | |
| Rao & Desai (1998) | Men | With | <i>daily amount</i> | 1-10 | 0.7 | 0.5- | 9.5 | age, area (not smoking and not alcohol drinking) | Not significant |
| | | | | 11-20 | 0.5 | 0.3- | 1.2 | | |
| | | | | 21-30 | 1.1 | 0.03- | 45.1 | | |
| | | | | 30+ | 10.04 | 0.5- | 209.4 | | |
| | Men | With | <i>years</i> | 1-10 | 0.5 | 0.3- | 0.89 | Not significant | |
| | | | | 11-20 | 0.9 | 0.5- | 1.5 | | |
| | | | | 21-30 | 0.9 | 0.5- | 1.4 | | |
| | | | | 30+ | 0.6 | 0.4- | 0.99 | | |

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|------------------------------|-------|----------------------|---------------------|-------|-------|--------|---|-------------|-------|-----|
| Muwonge <i>et al.</i> (2008) | Men | With and without | <i>daily amount</i> | 1-5 | 2 | 1.2- | age, smoking, alcohol drinking, education, religion | <0.001 | | |
| | | | | 6-10 | 4.5 | 2.7- | | | 3.5 | 7.7 |
| | | | | 10+ | 4 | 2- | | | 7.8 | |
| | Men | With and without | <i>years</i> | 0-20 | 1.9 | 1.1- | 3.3 | <0.001 | | |
| | | | | 20-39 | 4.9 | 2.8- | 8.5 | | | |
| | | | | 40+ | 5.4 | 2.7- | 10.8 | | | |
| | Women | With and without | <i>daily amount</i> | 1-5 | 8.5 | 4.2- | 17.6 | <0.001 | | |
| | | | | 6-10 | 10.3 | 5.1- | 20.8 | | | |
| | | | | 10+ | 18.8 | 8.5- | 41.6 | | | |
| | Women | With and without | <i>years</i> | 0-20 | 8 | 3.8- | 16.7 | <0.001 | | |
| | | | | 20-39 | 15.4 | 7.4- | 32.1 | | | |
| | | | | 40+ | 9.9 | 4.2- | 23.3 | | | |
| Rao <i>et al.</i> (1994) | Men | With | <i>daily amount</i> | 1-10 | 2.8 | 2.21- | age, area (not smoking and not alcohol drinking) | <0.001 | | |
| | | | | 11-20 | 3.52 | 2.12- | | | 3.52 | |
| | | | | 21-30 | 10.67 | 1.32- | | | 232.3 | |
| | Men | With | <i>years</i> | 30+ | 4.57 | 0.42- | 114.7 | | | |
| | | | | 1-10 | 1.28 | 0.9- | 1.82 | <0.001 | | |
| | | | | 11-20 | 3.92 | 2.7- | 5.7 | | | |
| | | | | 21-30 | 4.35 | 2.38- | 6.37 | | | |
| 30+ | 3.83 | 2.54- | 5.79 | | | | | | | |

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|--------------------------------|------|----------------------|---------------------------------|--------------|-------|--------|------------|--|--------|--------|--------|
| Subapriya <i>et al.</i> (2007) | Both | With and without | <i>daily amount (g/per day)</i> | 0-14 | 1.58 | 1.099- | 2.2712 | Age, sex, literacy, occupation, oral hygiene, alcohol drinking | <0.001 | | |
| | | | | 15+ | 4.98 | 3.482- | 7.1218 | | | | |
| | | | | <i>years</i> | 0-10 | 2.93 | 1.449- | | | 5.9228 | |
| | | | | | 11-20 | 2.56 | 1.391- | | | 4.71 | <0.001 |
| | | | | | 21-30 | 2.63 | 1.629- | | | 4.2459 | |
| | | | | | 31-40 | 2.72 | 1.775- | | | 4.1685 | |
| | | | | | 40+ | 3.01 | 1.995- | | | 4.5415 | |