

*Arja Rimpelä, Susanna Rainio, Lasse Pere,  
Tomi Lintonen, Matti Rimpelä*

*Use of tobacco products, alcohol use*  
**and exposure to drugs in 1977-2005**

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*Adolescent Health and Lifestyle Survey 2005 in Finland*



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## SUMMARY

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This report focuses on the use of tobacco products and alcohol among 12-18-year-old adolescents, their attitudes towards alcohol and tobacco, exposure to tobacco smoke, and social exposure to drugs as displayed in the materials of the Adolescent Health and Lifestyle Survey between 1977 and 2005, with emphasis on trends in the 21st century. Adolescent health behaviours have been followed by nationwide postal surveys using comparable methods every other year starting in 1977. The latest survey was conducted in February-April 2005. Altogether 6,503 adolescents responded to the inquiry. The response rate (66 %) was 3 % lower than that of the previous survey in 2003.

Use of alcohol, drunkenness, social exposure to drugs among both sexes, and smoking among girls became more common in the 1990s. The start of the new millennium marked a positive turn in health-related issues. The most remarkable changes in the current decade are:

Experiments with tobacco use are started at a later age than before and this trend also continued from 2003 to 2005. The rising trend of smoking among girls stopped and began to fall at the onset of the 21st century, among boys even earlier. The proportions of daily smokers among 14-16-year-olds approach those of 1979, which were the lowest ever measured.

Snuff experiments and current snuff use among boys have decreased after 2001, apart from 18-year-olds. Among girls, both experimenting and regular snuff use remained rare.

The falling trend of exposure to tobacco smoke (passive smoking) was highly significant after 1991 when it was measured for the first time.

Attitudes towards smoking have become stricter. In 2005, a ban on tobacco sales to under 18-year-olds was approved of by nearly all; non-smoking in coffee shops, bars and restaurants was accepted by almost 70 %. Among 12- and 14-year-olds, nearly 80 % considered that smoking is something that is done by 'losers'.

Abstinence has increased in the 2000s and experiments with alcohol are started at a later age. Use of alcohol decreased further among 12-14-year-olds between 2003 and 2005. Among 16- and 18-year-old boys, the falling trend of

weekly and monthly alcohol use came to a standstill, while among 18-year-old girls, the use kept rising until 2003.

Drunkenness among 14-16-year-old boys grew rarer from 1997 to 2003, but this trend stopped after 2003. Among 18-year-old boys, weekly drinking until really drunk increased from 7 % in 2003 to 12 % in 2005. Among 18-year-old girls, drinking until really drunk became more common from 2000 to 2003 but no longer so in the past two years. Among 12-year-olds, drunkenness was rare over the entire period of review. In 1979, one-fifth of 12-year-olds saw a moderate use of alcohol as part of everyday life. This proportion increased to 33 % in 1999, and further to 52 % in 2005.

Social exposure to drugs diminished after 2001. The proportion of adolescents knowing acquaintances who had used drugs continued falling in 2003 and 2005, and likewise did the proportion of adolescents who had been offered drugs.

On the whole, the trend of tobacco products use among adolescents has followed the course envisaged in the objectives of the national public health programme, Health 2015. The reduction in alcohol prices in 2004 seems to have interrupted the falling trend of alcohol use and contributed to increased weekly binge drinking among 18-year-old boys.

**Key words:** adolescents, alcohol and drugs, exposure, evaluation, substance use, tobacco

## TIIVISTELMÄ

Arja Rimpelä, Susanna Rainio, Lasse Pere, Tomi Lintonen, Matti Rimpelä. Tupakkatuotteiden ja päihteiden käyttö 1977 – 2005. Nuorten terveystapatutkimus 2005. Helsinki 2006. 103 s. (Sosiaali- ja terveysministeriön selvityksiä, ISSN 1236-2115, 2006:29)  
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Tässä raportissa tarkastellaan 12-18 -vuotiaiden tupakkatuotteiden ja alkoholin käyttöä sekä alkoholi- ja tupakka-asenteita, tupakansavulle altistumista ja sosiaalista altistumista huumeille Nuorten terveystapatutkimuksen aineistoissa 1977–2005 keskittyen 2000-luvun kehitykseen. Nuorten terveystottumuksia on seurattu valtakunnallisin postikyselyin vertailukelpoisin menetelmin vuodesta 1977 joka toinen vuosi. Tuorein kysely tehtiin helmi–huhtikuussa 2005. Kyselyyn vastasi 6503 nuorta. Vastausprosentti (66 %) oli 3 %-yksikköä alempi kuin vuonna 2003.

Alkoholin käyttö, humalajuominen, sosiaalinen altistuminen huumeille ja tyttöjen tupakointi yleistyivät 1990-luvulla. Terveiden kannalta myönteinen käänne tapahtui vuosituhaten alussa. Keskeiset muutokset 2000-luvulla olivat seuraavat:

Tupakkakokeilujen aloittamisen siirtyi myöhempään ikään ja myöhentyminen jatkui myös vuosien 2003-2005 aikana. Tyttöjen tupakoinnin nousu pysähtyi ja kääntyi laskuun 2000-luvulla, poikien jo aikaisemmin. Päivittäin tupakoivien osuudet 14-16-vuotiailla ovat lähellä vuoden 1979 lukuja, jotka ovat alhaisimmat koskaan mitatut.

Poikien nuuskakokeilut ja nykyinen nuuskaaminen vähenivät vuoden 2001 jälkeen lukuun ottamatta 18-vuotiaita. Tyttöillä kokeilut ja säännöllinen nuuskaaminen pysyivät harvinaisina.

Tupakansavulle altistuminen (passiivinen tupakointi) väheni erittäin merkittävästi vuoden 1991 jälkeen, jolloin sitä ensimmäisen kerran mitattiin.

Asenteet tupakointia kohtaan tiukentuivat. Tupakan myyntikiellon alle 18-vuotiaille hyväksyivät vuonna 2005 lähes kaikki, kahviloiden, baarien ja ravintoloiden savuttomuuden lähes 70 %. 12- ja 14-vuotiaista lähes 80 % piti tupakointia ”luuserien” puuhana.

Raittius lisääntyi 2000-luvulla ja alkoholikokeilut siirtyivät myöhempään ikään. Alkoholin käyttö väheni 12-14-vuotiailla edelleen vuosien 2003 ja 2005 välillä. 16- ja 18-vuotiailla pojilla viikoittaisen ja kuukausittaisen alkoholin käytön laskeva trendi pysähtyi, 18-vuotiailla tytöillä käyttö lisääntyi vuoteen 2003.

14-16-vuotiaiden poikien humalajuominen harvinaistui 1997-2003, mutta väheneminen pysähtyi vuoden 2003 jälkeen. 18-vuotiaiden poikien viikoittainen humalajuominen yleistyi 7 %:sta 12 %:iin vuosina 2003-2005. 18-vuotiailla tytöillä humalajuominen yleistyi 2000-luvulla, mutta ei kahden viime vuoden aikana. Humalajuominen oli koko tarkastelujakson ajan harvinaista 12-vuotiailla.

Viidennes 12-vuotiaista katsoi vuonna 1979, että kohtuullinen alkoholinkäyttö kuuluu tavalliseen elämänmenoon. Tämä osuus kasvoi 33 %:iin vuonna 1999 ja edelleen 52 %:iin vuonna 2005.

Sosiaalinen huumeille altistuminen väheni vuoden 2001 jälkeen. Sekä niiden osuus, jotka tiesivät tuttaviansa joukossa huumaavia aineita käyttäneitä, että niiden osuus, joille oli tarjottu huumeita, väheni edelleen vuosina 2003 ja 2005.

Nuorten tupakkatuotteiden käytön kehitys on viime vuosina edennyt pääosin Terveys 2015 -kansanterveysohjelman tavoitteiden suuntaisesti. Alkoholin hinnan alennus vuonna 2004 näyttää pysäyttäneen alkoholin käytön laskevan trendin ja lisänneen viikoittaista humalajuomista 18-vuotiailla pojilla.

**Avainsanat:** alkoholi, altistuminen, arviointi, huumeet, nuoret, päihteet, tupakka

## REFERAT

Arja Rimpelä, Susanna Rainio, Lasse Pere, Tomi Lintonen, Matti Rimpelä. Konsumtionen av tobak, alkohol och droger mellan 1977–2005. Hälsoundersökning bland unga 2006. Helsingfors 2006. 103 s. (Social- och hälsovårdsministeriets rapporter, ISSN 1236-2115, 2006:29)  
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I denna rapport undersöker man 12–18-åringarnas konsumtion av tobak och alkohol samt inställning till alkohol och tobak, exponering för cigarettök och social utsatthet för narkotika i materialet 1977–2005 för Hälsoundersökning bland unga genom att koncentrera sig på utvecklingen under 2000-talet. De ungas hälsovanor har följts upp genom riksomfattande postenkäter med jämförbara metoder vartannat år sedan år 1977. Den senaste enkäten gjordes i februari–april 2005. Enkäten besvarades av 6 503 ungdomar. Svarefrekvensen (66 %) var 3 procentenheter lägre än år 2003.

Konsumtionen av alkohol, att dricka sig berusad, social utsatthet för narkotika och rökning bland flickor blev vanligare under 1990-talet. En ur hälsoperspektiv positiv vändning skedde i början av årtusendet. Följande väsentliga förändringar har skett under 2000-talet:

Åldern för när man provar att röka första gången steg och denna höjning av åldern fortsatte även under åren 2003–2005. Den ökade rökningen bland flickor avstannade och vände neråt under 2000-talet, bland pojkarna redan tidigare. Siffrorna för andelen 14–16-åringar som röker dagligen är nära siffrorna för år 1979 som är den lägsta som någonsin har mätts.

Pojkarnas snusexperiment och regelbundna snusande avtog efter år 2001 med undantag av 18-åringarna. Snusexperiment och regelbundet snusande bland flickor var även fortsättningsvis sällan förekommande.

Exponeringen för cigarettök (passiv rökning) minskade betydligt efter år 1991 då man mätte detta för första gången.

Inställningen till rökning skärptes. År 2005 godkändes förbudet mot försäljning av cigaretter till personer under 18 år av så gott som alla och rökfria kafféer, barer och restauranger av närmare 70 %. Av 12–14-åringarna ansåg nästan 80 % att rökning var någonting som bara ”losers” sysslade med.

Nykterheten ökade under 2000-talet och åldern för när man provar på alkohol steg. Alkoholkonsumtionen bland 12–14-åringar minskade ytterligare mellan åren 2003 och 2005. Den sjunkande trenden när det gäller den veckovisa och månatliga alkoholkonsumtionen för 16-åringar och 18-åringar avstannade; bland 18-åringar flickor ökade konsumtionen fram till år 2003.

Att dricka sig berusad blev mer sällsynt bland 14–16-åringar åren 1997–2003 men efter 2003 avstannade minskningen. Andelen 18-åriga pojkar som hade för vana att dricka sig berusade varje vecka steg från 7 % till 12 % under åren 2003–2005. Att dricka sig berusad blev vanligare bland flickor i 18-årsåldern under 2000-talet men inte längre under de sista två åren. Under hela undersökningsperioden var det ovanligt bland 12-åringar att dricka sig berusade. År 1979 ansåg var femte 12-åring att en rimlig alkoholkonsumtion hör de till det dagliga livet. Denna andel steg till 33 % år 1999 och vidare till 52 % år 2005.

Den sociala utsattheten för narkotika minskade efter år 2001. Både andelen personer som hade använt droger bland sina vänner och bekanta och personer som hade blivit erbjudna narkotika minskade under åren 2003 och 2005.

Utvecklingen av konsumtionen av tobaksprodukter bland unga har under de senaste åren huvudsakligen gått i samma riktning som målen för folkhälsoprogrammet Hälsa 2015. Sänkningen av alkoholpriset år 2004 tycks ha stoppat den sjunkande trenden för alkoholkonsumtionen och ökat andelen 18-åriga pojkar som dricker sig berusade varje vecka.

**Nyckelord:** alkohol, berusningsmedel, droger, exponering, tobak, unga, utvärdering



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61. Statistical significance of difference in various indicators between 2001 and 2005, by age and sex. P-values of  $\chi^2$ -test. Adolescent Health and Lifestyle Survey.



## INTRODUCTION

For several decades, the Finnish health policy has aimed at reduction of smoking and use of alcohol and drugs among the youth. In the 1980s and 1990s, however, there were signs of unwelcome development: alcohol and drug use among adolescents increased, and smoking remained on a high level, even increasing among girls.

The most recent goals to reduce smoking, alcohol and drug use among adolescents were set in 2001 when the Health 2015 Programme for public health was published (1). The objective for alcohol and drug use was that the adverse health effects from the use can be appropriately managed, and that their frequency should not rise above the level of the early 1990s. At the same time, the proportion of smoking should decrease to below 15% in the 16-18-year-olds.

In the first years of the new millennium, a positive trend was finally observed when both smoking and alcohol and drug use among adolescents began to decline (2,3). Contributory factors included not only the intensified efforts to improve the welfare of school-aged children, but also the health-oriented tobacco policy, e.g. a more effective tobacco sales ban (4).

No major changes have taken place in the Finnish tobacco policy after the 2003 Adolescent Health and Lifestyle Survey. Instead, in 2004, Finland implemented a remarkable change in her alcohol policy, the most dramatic in over 30 years. When Estonia became member of the EU, alcohol import quotas from Estonia into Finland were lifted, and, to control the imports, taxation on alcohol was greatly reduced from the early March of 2004. With easier access to alcohol, and lower prices, an increase in alcohol consumption among the youth could be anticipated as well.

From 1977 onwards, the Adolescent Health and Lifestyle Survey (AHLS) has followed how well the goals of the Finnish health policy for adolescent smoking and alcohol and drug use have been achieved. In this report, we present the results of the 2005 nationwide survey in relation to the earlier biennially conducted surveys concerning adolescent smoking, use of alcohol, and social exposure to drugs. The Appendix Tables show the results of the 2005 survey by age and sex, as well as the trends from 1977 to 2005 using several indicators for the different age and sex groups and with the focus areas adjusted for age and sex.

## MATERIALS AND METHODS

These study results are based on the materials of the Adolescent Health and Lifestyle Survey, collected by postal inquiries every other year from 1977 to 2005. The questionnaires were mailed out at the same time in February of each survey year. Non-respondents were sent a re-inquiry, first in early March, and second in early April.

The study materials were gathered from nationally representative samples. In the early study years, the samples included all young people born on certain consecutive days in July. Later, birth dates from other summer months were also used. New birth dates were selected as close to the original dates as possible, yet aiming to avoid dates used in the previous years. The sample dates were selected so that the average ages of respondents in each study year were 12.6, 14.6, 16.6 and 18.6 years. The birth dates of each sample are presented in Appendix 1.

Table 1 shows the numbers of respondents and the response rates by age and sex. The proportion of respondents has decreased over the past two decades, specifically among 16- and 18-year-old boys, and the response rate has been lower in the 2000s than before (Table 1). Compared to 2003, the response rate of 2005 was lower by 3 percentage points, 4 in girls and 2 in boys. The effect of lower response rates on the prevalence of smoking, alcohol use and social exposure to drugs is estimated in Appendix 2.

The surveys were conducted with the aim to maintain a high comparability of results between years. Special attention was, therefore, paid to material collection methods, question design, and samples. The timing of the inquiries was kept unaltered over the years to preclude changes in adolescent behaviour related to season and special holidays.

Each year, the study questionnaire was 12 pages in length, but the number of questions varied. The topics varied likewise so that besides the basic themes (smoking, use of alcohol, physical activities, background information, health) questions describing more specific subject areas were asked, or some themes were examined more deeply. In 2005, questions on e.g. physical activities in schools, issues related to hobbies/activities outside the home, and whether smoking is permitted at home were asked. Questions designed to measure a certain phenomenon were kept unaltered in the separate surveys, unless the evolution of the phenomenon demanded otherwise (compare e.g. revisions of the Tobacco Act). A clear association between the question batteries presented in the questionnaires and the response rates has not been observed. The questionnaire of 2005 is included in the appendix of this report.

Part of the results have been presented adjusted for age and sex. Direct standardization was used, with the assumption that each age and sex group was of equal size. The statistical significances of differences between years 2003 and 2005, and years 2001 and 2005 were tested with  $\chi^2$ -test. The results are shown in tables 60 and 61.

**Table 1.** Numbers of respondents and response rates in the Adolescent Health and Lifestyle Surveys in 1977-2005, by sex, age and survey year.

Sex and age	Year															
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005	
<b>NUMBER OF RESPONDENTS</b>																
<b>BOYS</b>																
	12	369	491	483	450	353	414	406	426	399	395	427	442	351	368	395
	14	345	565	488	429	395	1128	361	1196	1203	1177	1168	1187	1251	1092	1092
	16	386	528	535	413	452	1183	362	1008	1168	1232	1126	1110	892	1003	806
	18	347	523	519	489	401	1134	328	893	1029	1071	1088	1112	774	570	681
Total		1447	2107	2025	1781	1601	3859	1457	3523	3799	3875	3809	3851	3268	3033	2974
<b>GIRLS</b>																
	12	341	540	514	440	359	367	430	399	437	424	440	407	425	390	418
	14	367	535	548	482	433	1202	431	1337	1299	1301	1347	1313	1485	1245	1189
	16	347	579	529	509	497	1284	380	1272	1389	1469	1379	1333	1138	1296	985
	18	330	512	524	509	463	1401	407	1103	1265	1313	1415	1315	976	797	937
Total		1385	2166	2115	1940	1752	4254	1648	4111	4390	4507	4581	4368	4024	3728	3529
GRAND total		2832	4273	4140	3721	3353	8113	3105	7634	8189	8382	8390	8219	7292	6761	6503
<b>RESPONSE RATE</b>																
<b>BOYS</b>																
	12	90	88	88	85	80	81	76	77	73	78	76	79	72	69	67
	14	88	86	87	78	74	81	75	74	74	75	69	74	66	66	64
	16	85	83	85	75	76	77	70	61	70	72	68	68	62	59	57
	18	83	78	81	75	68	69	63	31	66	67	60	63	53	50	49
Total		86	83	85	78	74	76	71	69	70	72	67	69	62	60	58
<b>GIRLS</b>																
	12	91	90	92	91	84	83	82	82	84	86	87	85	82	75	75
	14	94	91	92	86	88	90	90	86	86	85	84	85	79	78	75
	16	89	91	91	91	87	89	82	86	87	88	87	85	82	79	76
	18	88	85	88	87	83	84	80	82	83	86	83	80	76	74	68
Total		91	89	91	89	86	87	84	84	85	86	85	83	79	77	73
GRAND total		88	86	88	83	80	81	77	77	78	79	76	76	70	69	66

### *Indicators for tobacco, alcohol and drug use*

**Tobacco experimenters** were those who responded affirmatively to question "Have you ever smoked (tried) tobacco?" (see Appendix/Questionnaire, Q.27). If the respondent answered No to this question, yet reported smoking in later questions, he/she was classified as a tobacco experimenter.

**Daily smokers** were respondents reporting that they had smoked more than 50 cigarettes in all, had smoked during the past week, and reported smoking once a day or more often (Q. 28-30). The daily smokers' category also included those who selected alternative "I smoke once a week or more often, but not daily" of question 30, and reported smoking more than one cigarette a day (Q.31).

**Daily snuff (snus) users** were those who reported taking snuff daily in question 40.

**Daily users of tobacco products** were respondents classified either as daily smokers or daily snuff users, according to the above definitions. Because the question on current snuff use produced more missing data than the actual tobacco questions (Q.27-31), the calculated proportions were based on the numbers of respondents with categorized variables describing daily cigarette smoking. This was justified as the majority of participants not answering the snuff question (Q.40) had never tried snuff (Q.39). In 1977 and 1979, the snuff question was slightly different, thus the indicator for daily tobacco product users is shown from 1981 only. Another exception is the year 1985 when snuff was not asked at all and which, therefore, is excluded from the presentation.

**Snuff (snus) experimenters** was the category for respondents who answered affirmatively to question "Have you every tried snuff?" (Q.39).

**Current snuff (snus) users** were those respondents who reported using snuff occasionally or once a day or more often (Q.40).

**Self-rolled cigarette smokers** were those daily cigarette smokers who reported their daily self-rolled cigarette consumption as one or more (Q.31). This category also included those who reported the number of self-rolled as well as of manufactured cigarettes or pipefuls.

**Attitudes to tobacco restrictions and use** were categorized so that the indicators were based directly on the alternatives: those in the category of agreement with the statements included options "definitely agree" and "agree to some extent" (Q.82-84). Statements 82 ("Smoking is for losers") and 84 ("Coffee shops, bars and restaurants should be smoke-free") first appeared in the 2005

survey. Statement 83 ("It is right that sale of tobacco to under 18 is forbidden.") has been asked since 1995, with the exception of year 2001.

**Daily exposure to tobacco smoke** was examined by two indicators: proportion of those who reported no exposure to tobacco smoke at all, and proportion of those who reported being in smoke-filled rooms for an average of one hour or more daily (Q.25).

**Non-drinkers** were interpreted as those respondents who answered to question 58 by "I do not use alcohol" (see Appendix / Questionnaire).

**Age for drinking alcohol for the first time** was measured by question 57, used in the survey since 2001. **Proportion of those who reported having drunk alcohol at least once** (those reporting age) was chosen as the indicator, because it was an indicator comparable with that of the earlier years. A change of level can be seen in the results from 1999 to 2001, which is mostly explained by the change in the formulation of the question. In the original question from 1977, ciders were not mentioned and, consequently, new drinks like ciders and other mild drinks remained absent. In their present form, ciders were not introduced to the market until the 1990s. In the old question, age for experimenting was elicited with four different subquestions: "At what age did you first drink at least a glassful of beer/long drinks/wine/spirits?" Since 2001, this formulation has been replaced with one question: "How old were you when you had an alcoholic beverage for the first time?"

Indicators for alcohol drinking frequency were categorized according to question 58.

**Weekly alcohol users** include respondents who chose alternatives "daily", "a few times a week", or "once a week".

**At least monthly alcohol users** included the preceding group added with those who answered by alternatives "a few times a month" and "about once a month".

Indicators for drunkenness-oriented drinking were calculated on the basis of question 59 (see Appendix/Questionnaire,).

**Drinking until really drunk at least once a week** was an indicator for respondents who replied by alternative "once a week or more often". Calculations were based on the number of respondents answering either this question and/or question 58 concerning alcohol use.

**Drinking until really drunk at least once a month** was likewise an indicator based on the sum total of those getting drunk once a week and those getting drunk once or twice a month.



For the **attitude on alcohol use** (Q.85), an indicator was based directly on given alternatives, those in the category of agreement with the statements included options "definitely agree" and "agree to some extent". Question 85 ("Moderate use of alcohol is part of ordinary life") was previously included in the survey of 1999.

**Social exposure to (illegal) drugs** was determined from the knowledge of drug experimenters among acquaintances, and from drugs offered. Question 42 inquired whether the respondent knew an acquaintance who had used drugs during the past year. As indicators we used **the proportions of those who knew at least one acquaintance** and **those who knew five or more acquaintances who had tried drugs**.

**The proportions of participants who had been offered drugs** were calculated from the question (Q.43) concerning drugs offered. We included those respondents who did not report if drugs were offered by acquaintances or strangers.

Calculations were performed separately for **the proportions of respondents who were offered drugs by friends or acquaintances** and **who were offered drugs by strangers**.

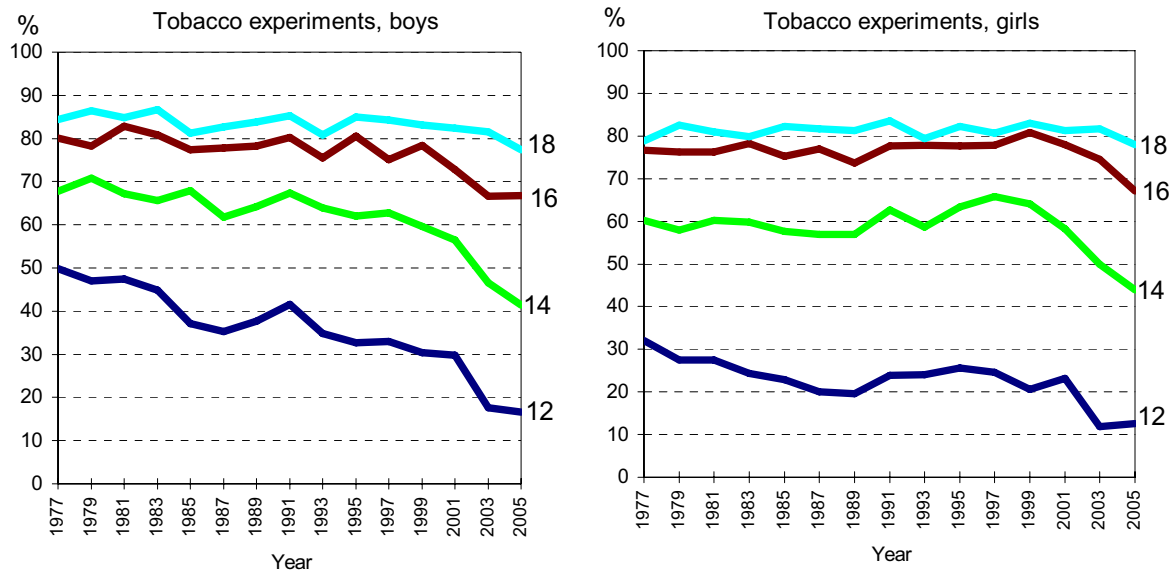
## SMOKING

### *Smoking experiments*

In 2005, 13% of 12-year-old girls and 17% of boys of the same age reported having tried smoking. Still at 14 years, those who had never smoked constituted the majority, but of the 16-year-olds, the majority had already tried smoking, 67% in both girls and boys (Figure 1, Appendix Tables 1 and 9). In the 18-year group, most had experimented with tobacco, one-fifth still had never tried (22%).

In the 12- and 14-year-olds, proportions of tobacco experimenters fell during the study period: in boys the decline was seen from the early 1990s, but in girls not until the end of the decade. Between 2003 and 2005, experiments further declined in the 14-year-olds, but remained almost unchanged in the 12-year-olds. However, when observed over a long time period, the biggest change is seen among the 12-year-old boys; tobacco experiments fell from 50% in 1977 to 17% in 2005 (Appendix Tables 9 and 40).

On entering the 1990s, sex differences in tobacco experimentation weakened, and today, they are nearly absent. In 1997, girls surpassed boys in the frequency of smoking experiments in the 14-year-olds. Smoking experimentation is still somewhat more frequently reported by 12-year-old boys than girls.



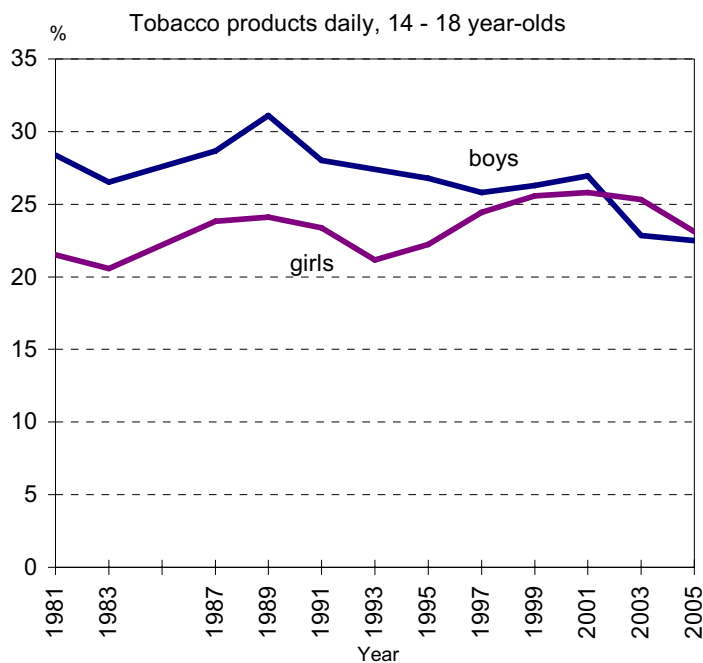
**Figure 1.** Percentage of 12-18-year-olds who have tried tobacco by age and sex in 1977-2005. Adolescent Health and Lifestyle Survey 2005.

### *Daily use of tobacco products*

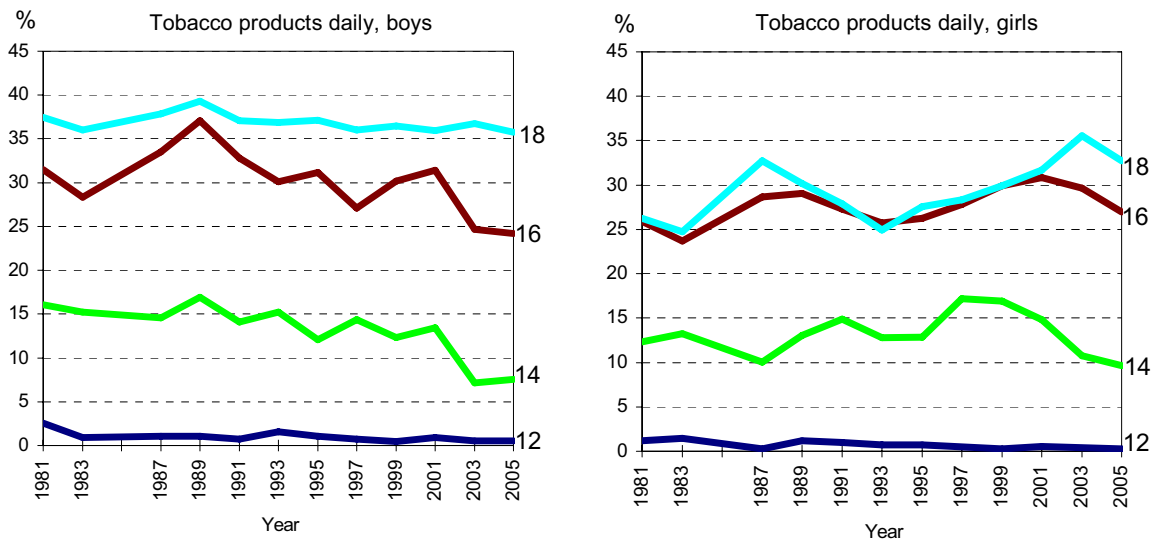
Use of tobacco products covers all tobacco commodities (cigarettes, snuff, cigars, pipes). The last two items are very rarely consumed. In 2005, the consumption of tobacco products was almost equally distributed between girls and boys of 14-18 years of age, 22% in boys and 23% in girls (Appendix Tables 10 and 41). In the 14- and 16-year-olds, tobacco consumption was somewhat more frequent among girls than among boys (10% vs. 8%, 27% vs. 24%), while among the 18-year-olds, the situation was the opposite (33% vs. 36%). The 12-year-olds reported a negligible daily use of tobacco products.

A gradual rise in the use of tobacco products among 14-18-year-old girls was observed from the early 1980s until the early 2000s (Figure 2, Appendix Table 41). After 2001, the rising trend stopped and began to fall. In boys, use of tobacco products had shown signs of a modest decline already in the 1990s, and a similar trend continued between 2003 and 2005 as well.

Changes in the use of tobacco products in the different age groups were fairly similar to the age-adjusted values for 14-18-year-olds (Figure 3, Appendix Table 10). The 18-year-old boys were an exception in that their use of tobacco products hardly altered over the review period. In girls, on the other hand, a decline was apparent already at the end of the 1990s in the 14-year-olds, after 2001 in the 16-year-olds, and not until after 2003 in the 18-year-olds.



**Figure 2.** Age-adjusted percentage of 14-18-year-olds who use tobacco products daily by sex in 1981-2005. Adolescent Health and Lifestyle Survey 2005.



**Figure 3.** Percentage of 12-18-year-olds who use tobacco products (cigarettes, snuff, pipe, cigars) daily by age and sex in 1981-2005.) Adolescent Health and Lifestyle Survey 2005.

### *Use of snuff (snus)*

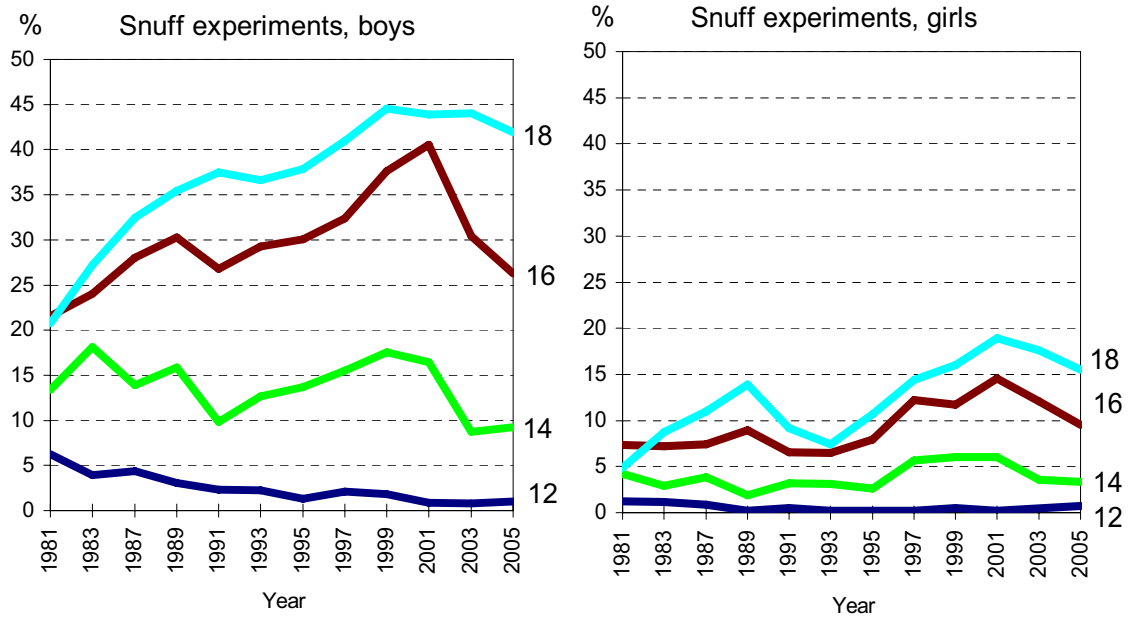
Snuff experiments increased among 14-18-year-old boys from the early 1990s until the early 2000s. After this, the rising trend of snuff experiments stopped in the 18-year-olds, and a steep decline began in the 14-16-year-olds (Figure 4, Appendix Table 13). The falling trend continued among the 16-year-olds from 2003 to 2005. Of 12-year-old boys, very few experiment with snuff, and their numbers have been decreasing ever since the beginning of the 1980s. Among boys in 2005, snuff experiments were reported by only abt. 1% of 12-year-olds, 9% of 14-year-olds, 26% of 16-year-olds, and by as many as 42% of 18-year-olds (Appendix Tables 2, 13 and 46).

The trends of current (occasionally or daily) and daily snuff users were similar to those of snuff experimenters, although the proportions were notably smaller (Figure 5, Table 2, Appendix Table 3, 14 and 47). Percentages of occasional or daily snuff users were increasing, especially towards the end of the 1990s and until the early 2000s when the rising trend stopped and began to fall. Between 2003 and 2005, the decline stopped in other than 16-year-olds, and the trend began to rise again in 14- and 18-year-old boys.

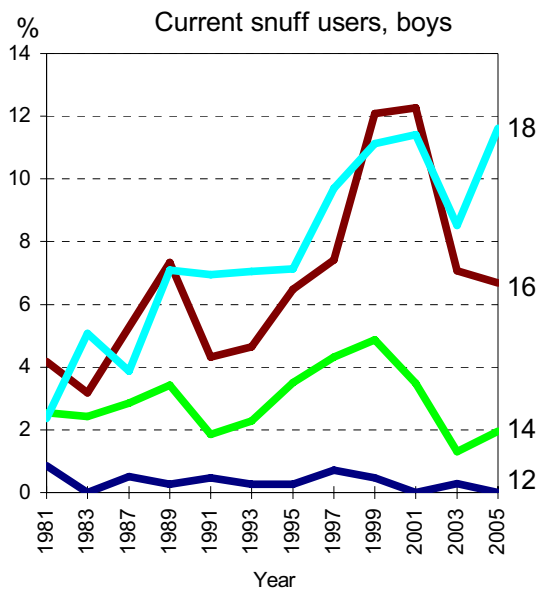
Girls report considerably less frequent snuff experimenting and usage than boys. Apart from a few single cases, there were no daily snuff users among girls, and the average proportion of all those reporting occasional or daily use remained under one per cent. This proportion underwent only minute changes over the past decade (Appendix Table 14).

**Table 2.** Daily use (%) of tobacco products (all products inclusive) and cigarettes and snuff (snus) in 14, 16 and 18-year-old boys in 1981-2005. Adolescent Health and Lifestyle Survey 2005.

Tobacco product and age	1981	1983	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
<b>14-year-olds</b>												
Tobacco products daily	16.1	15.2	14.5	16.9	14.1	15.2	12.1	14.1	12.3	13.4	7.2	7.5
Cigarettes daily	15.4	14.7	14.1	15.8	14.1	14.9	11.8	13.6	11.9	13.2	7.2	7.3
Snuff daily	0.6	0.2	0.6	1.1	0.3	0.6	0.3	0.6	0.7	0.7	-	0.3
<b>16-year-olds</b>												
Tobacco products daily	31.5	28.3	33.5	37.0	32.8	30.1	31.2	27.1	30.2	31.4	24.7	24.2
Cigarettes daily	29.9	27.1	32.7	36.0	31.8	29.3	30.3	25.7	28.2	29.2	23.3	23.3
Snuff daily	1.3	1.2	1.0	1.4	1.2	0.7	1.4	1.5	2.5	3.3	1.4	1.4
<b>18-year-olds</b>												
Tobacco products daily	37.5	36.0	37.9	39.3	37.1	36.8	37.1	36.0	36.4	36.0	36.7	35.8
Cigarettes daily	36.0	34.4	36.7	38.3	35.7	35.3	35.5	33.3	33.7	33.0	34.7	33.9
Snuff daily	1.2	1.9	1.0	1.2	1.9	1.7	2.0	3.1	3.5	3.0	2.3	2.2



**Figure 4.** Percentage of 12-18-year-olds who have tried snuff (snus) by age and sex in 1981-2005. Adolescent Health and Lifestyle Survey 2005.

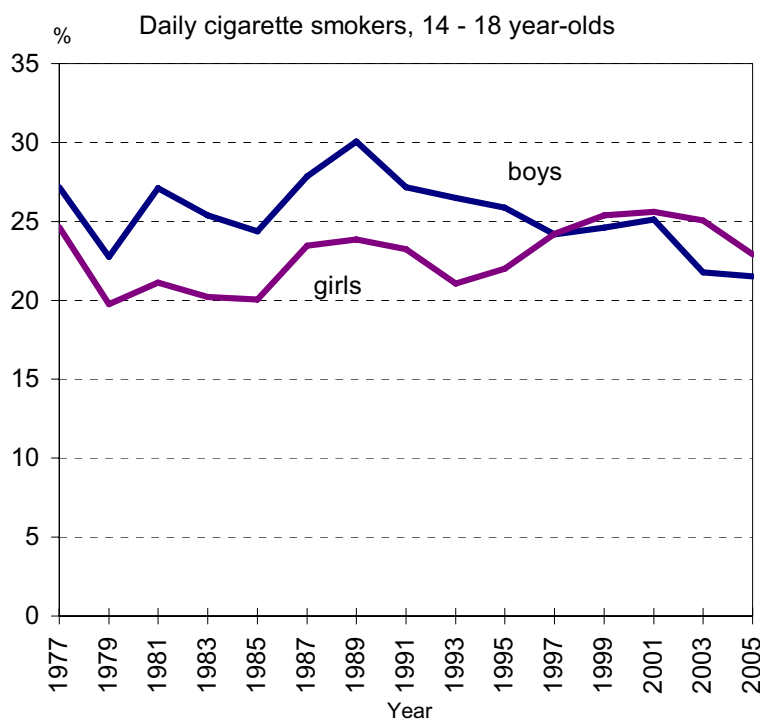


**Figure 5.** Percentage of 12-18-year-old boys who use snuff (snus) occasionally or daily in 1981-2005. Adolescent Health and Lifestyle Survey 2005.

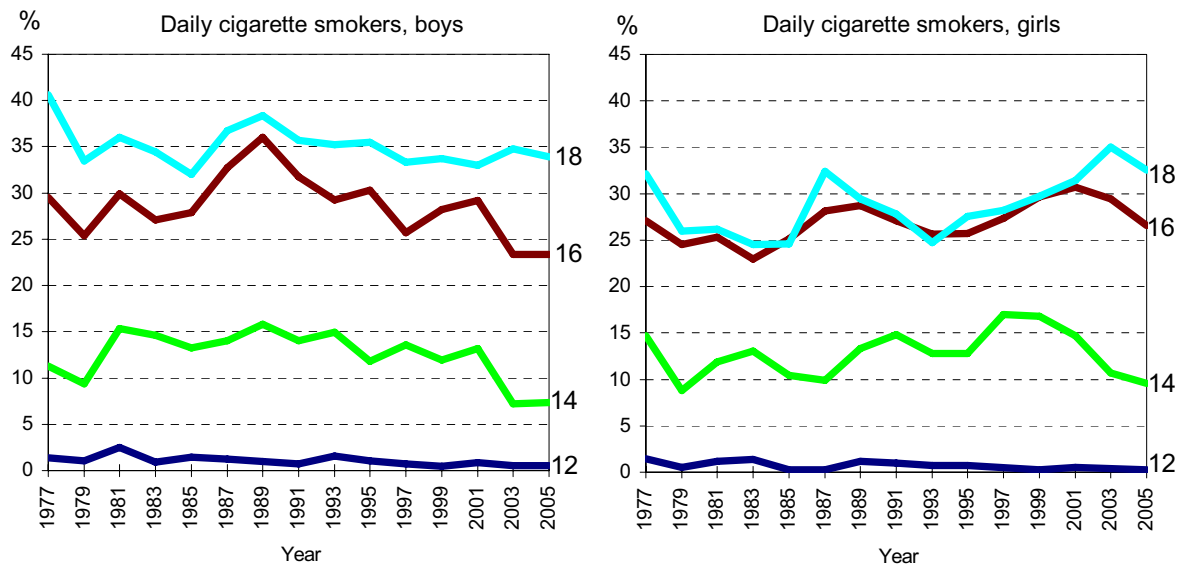
### *Daily cigarette smoking*

In girls, the proportion of daily cigarette smokers is nearly identical to that of daily tobacco products users, because girls seldom use snuff (Figure 6, Appendix Table 11). For boys, when examining only cigarette smoking, a slightly more positive overall impression is obtained about the prevalence and decrease of tobacco use (Figure 6) than when examining the use of all tobacco products combined. Proportions of daily cigarette smokers in 1977-2005 are shown in Figure 7 (see also Appendix Table 42).

Table 2 shows the total consumption of all tobacco products (cigarettes, snuff, pipe, cigars), and separately the proportions of cigarette and snuff users among 14-, 16- and 18-year-old boys. There are hardly any pipe or cigar users. Table 2 shows that focusing on cigarette smoking only gives a misleading picture of boys' tobacco use. Corresponding values for girls are not given, because snuff use in girls has remained a rarity.



**Figure 6.** Age-adjusted percentage of 14-18-year-olds who smoke cigarettes daily by sex in 1977-2005. Adolescent Health and Lifestyle Survey 2005.



**Figure 7.** Percentage of 12-18-year-olds who smoke cigarettes daily by age and sex in 1977-2005. Adolescent Health and Lifestyle Survey 2005.

### *Consumption of cigarettes*

Of the 14-year-old daily cigarette smokers, boys smoked on average 9.3 and girls 7.9 cigarettes a day (Appendix Table 5). Cigarette consumption increased with age, but differences remained between sexes. At 18 years, boys smoked on average 13.4 cigarettes daily, and girls 9.5. The difference in the consumption between girls and boys grew with age, with boys smoking a greater number of cigarettes every day than girls. At 14, the difference was about 1-2 cigarettes, at 18, it was already almost four.

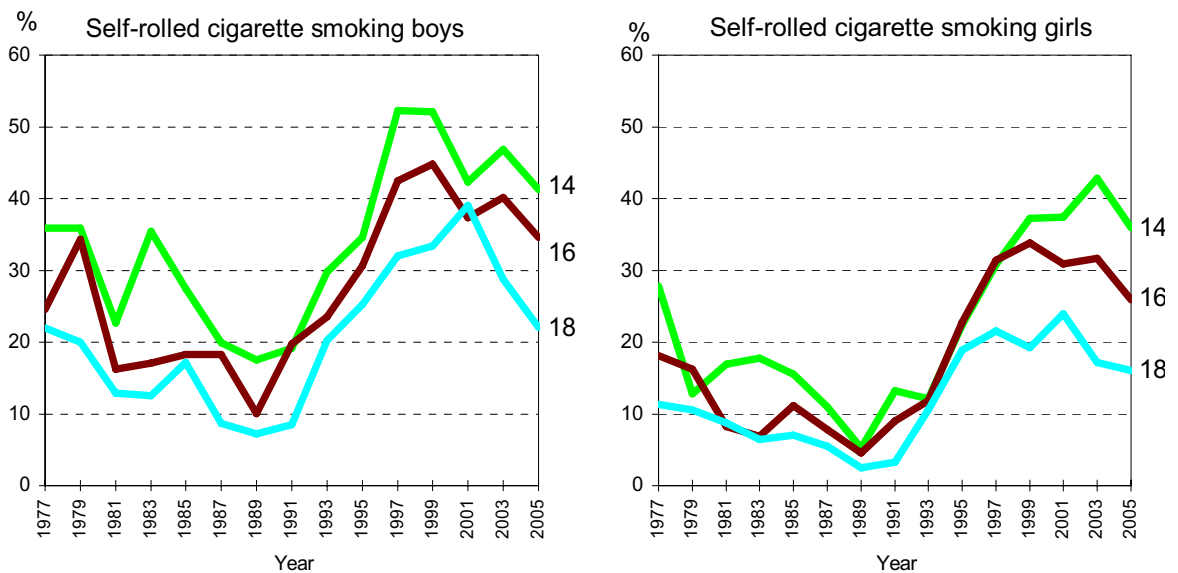
The number of cigarettes smoked daily climbed from the end of the 1970s until the 1990s (Appendix Tables 15 and 45). In 2005, the daily consumption of cigarettes was about 1-2 cigarettes higher than at the end of the 1970s and the early 1980s, except for 18-year-old boys whose consumption was unchanged. Between 2003 and 2005, cigarette consumption declined somewhat with the exception, again, of 18-year-old boys.

In 2005, about a quarter of 18-year-old boys and 16% of girls smoked over nine cigarettes every day (Appendix Tables 12 and 43). The corresponding rates for 16-year-olds were 15% in boys and 12% in girls; and for 14-year-olds were 3% in both sexes.



### *Self-rolled cigarettes*

Young people mainly smoke manufactured cigarettes (Appendix Table 4). Smoking pipe and cigar is rare. Boys self-roll their cigarettes slightly more often than girls. Among daily tobacco product users, smoking of self-rolled cigarettes increased multifold in the 1990s, either exclusively or together with manufactured cigarettes, but began to fall after 1999 in most age and sex groups (Figure 8, Appendix Tables 16 and 44). The decline continued also between 2003 and 2005. Self-rolled cigarettes were favoured by the 14-year-olds as compared to older age groups. In 2005, 41% of the 14-year-old boys and 36% of the girls smoked self-rolled cigarettes partly or solely.

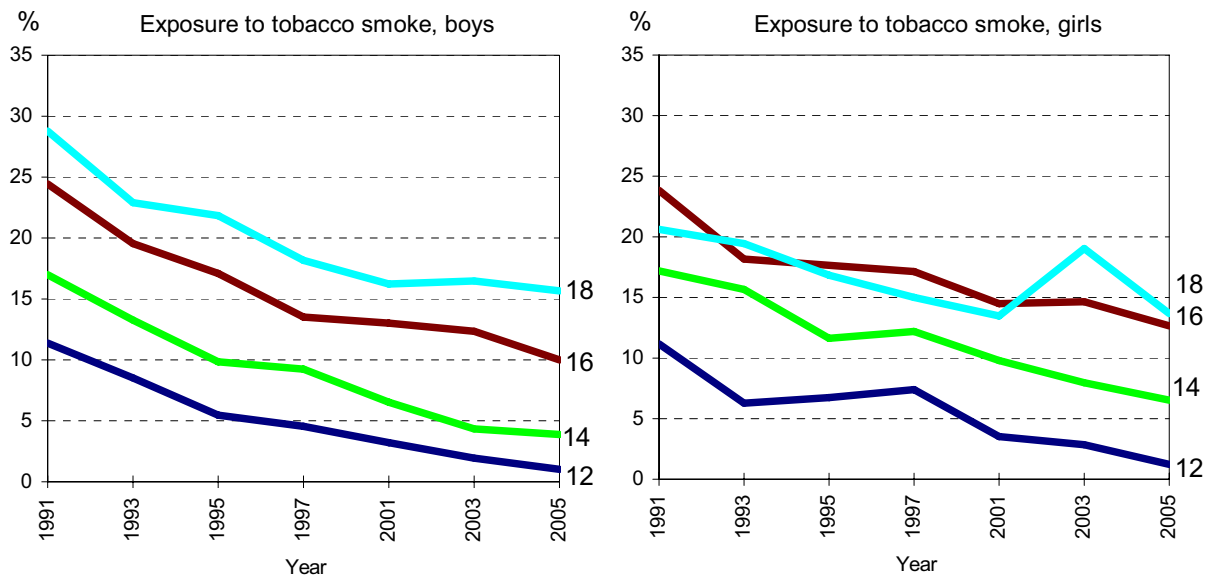


**Figure 8.** Percentage of 14-18-year-olds who smoke self-rolled cigarettes daily by age and sex in 1977-2005. Adolescent Health and Lifestyle Survey 2005.

### *Exposure to tobacco smoke*

In 2005, the proportion of boys who were not exposed to tobacco smoke daily was 96% and of girls 94% in the 12-year-old group (Appendix Table 17). The rates decreased with age, but approached 60% even among the 18-year-olds. Differences between sexes were small.

Exposure to tobacco smoke decreased to a remarkable degree from 1991 to 2005 (Figure 9, Appendix Tables 18-19 and 48-49). Especially the long-lasting stay in smoke-filled rooms (1-5 or more hours per day) showed a substantial shortening in all age and sex groups.



**Figure 9.** Percentage of 12-18-year-olds who are exposed to tobacco smoke for at least one hour daily in 1991-2005. Adolescent Health and Lifestyle Survey 2005.

*Attitudes to tobacco restrictions and use*

In the 2005 survey, the norms of legislation were measured with a statement "It is right that sale of tobacco to under 18 is forbidden". The Tobacco Act section concerning tobacco sales ban was modified in 1995 by raising the age limit for tobacco purchase from 16 to 18 years. Although the majority of adolescents supported the sales ban already at the time the law was enacted, their number continued to rise after this (Appendix Table 6). In 2005, the majority of 18-year-olds (over 90%) were in favour of the ban. The largest number of supporters (97%) were seen, however, in the 12-year-olds (Appendix Table 7). Also among the 16-year-olds, the specific target for the ban, it was supported by 77% of the boys and 84% of the girls (Appendix Table 20).

The 2005 survey included two new statements, "Smoking is for losers" and "Coffee shops, bars and restaurants should be smoke-free". Agreement with the statement "Smoking is for losers", completely and to some extent, was reported by 65% of the adolescents (Appendix Table 7). Of the 12-year-olds, as many as 88% of the boys and 83% of the girls agreed with the statement, of the 14-year-olds 73% and 67%, respectively. The 18-year-olds showed more caution, the alternative "difficult to say" was chosen by one-fourth, but, nonetheless, 48% of this age group agreed with the statement.

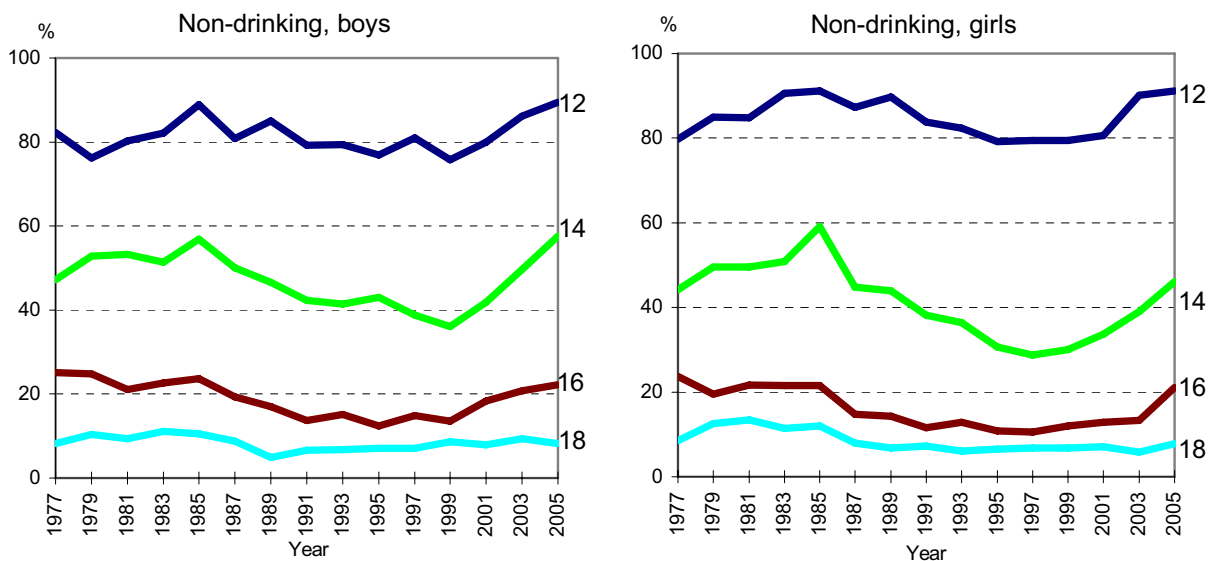
Overall, the young respondents supported smoke-free coffee shops, bars and restaurants. In the 12-year-olds, agreement with smoking restrictions were reported by 88% of the boys and 92% of the girls. The attitudes became less favourable with age, hardly any differences showing between the sexes. Among the 18-year-olds, the support was the weakest (48%). In this age group, the proportion of disagreement was 36% in the boys and 34% in the girls (Appendix Table 8).

## DRINKING ALCOHOL

### *Non-drinking and age of alcohol experimenting*

In 2005, nine of ten 12-year-olds reported that they abstain from alcoholic drinks, even in small quantities – the number of non-drinkers was slightly higher in girls than in boys (Appendix Table 22). Among the 14- and 16-year-olds, non-drinking boys clearly outnumbered non-drinking girls. In the 18-year-old group, 8% reported non-drinking.

Alcohol abstinence became clearly more common after 1997-1999 in all age groups, except in the 18-year-olds (Figure 10, Appendix Tables 25 and 50). In 2005, 58% of the boys and 46% of the girls in the 14-year-old group reported abstinence, compared with 36% and 30% in 1999, respectively.



**Figure 10.** Percentage of 12-18-year-olds who abstain from alcohol by age and sex in 1977-2005. Adolescent Health and Lifestyle Survey 2005.

The proportions of respondents reporting abstinence are bigger than the proportions of those who had never drunk alcohol. Of the 14-year-olds, a little over a half of the boys and 42% of the girls had never drunk alcohol, while in the 18-year-olds, the rate was about every-fifth in both sexes (Appendix Table 21). Sex differences in the older age groups were small.

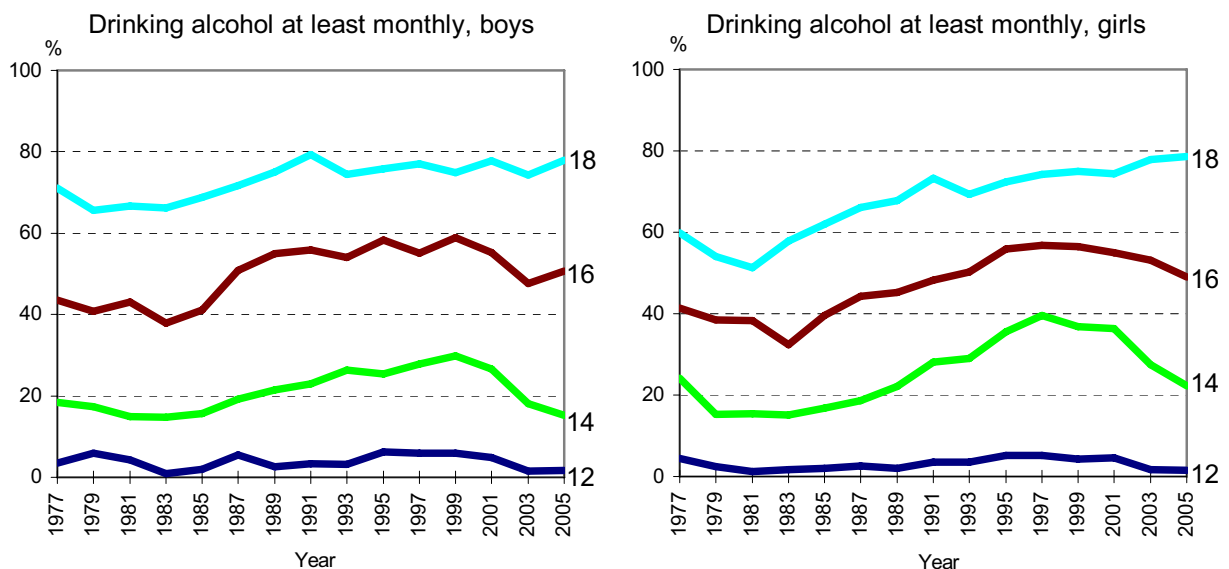
From 2001 to 2005, the proportions of 12- and 14-year-olds who had tried alcohol dropped to a remarkable degree (Appendix Table 26). In the 18-year group, no changes were found.

### *Frequency of alcohol drinking*

In 2005, the proportions of adolescents who drank at least small amounts of alcohol once a month or more often were 2% of both sexes in the 12-year-old group, 22% of girls and 15% of boys in the 14-year-old group, 49% of girls and 52% of boys in the 16-year-old group, and 79% of girls and 78% of boys in the 18-year-old group (Appendix Tables 28 and 51).

The growing trend of monthly or more frequent use of alcohol ceased among the 12-16-year-olds around 1977-1999, and then began to decrease, in girls somewhat earlier than in boys (Figure 11). Between 2003 and 2005, drinking frequency continued to decline in the 14-year-old group and in the 16-year-old girls.

In the 18-year-old girls, alcohol use increased from the early 1980s up until 2003, but over the past two years, this growing trend came to a stop. In boys, any change is hardly noticeable since the early 1990s (Figure 11, Appendix Table 28).

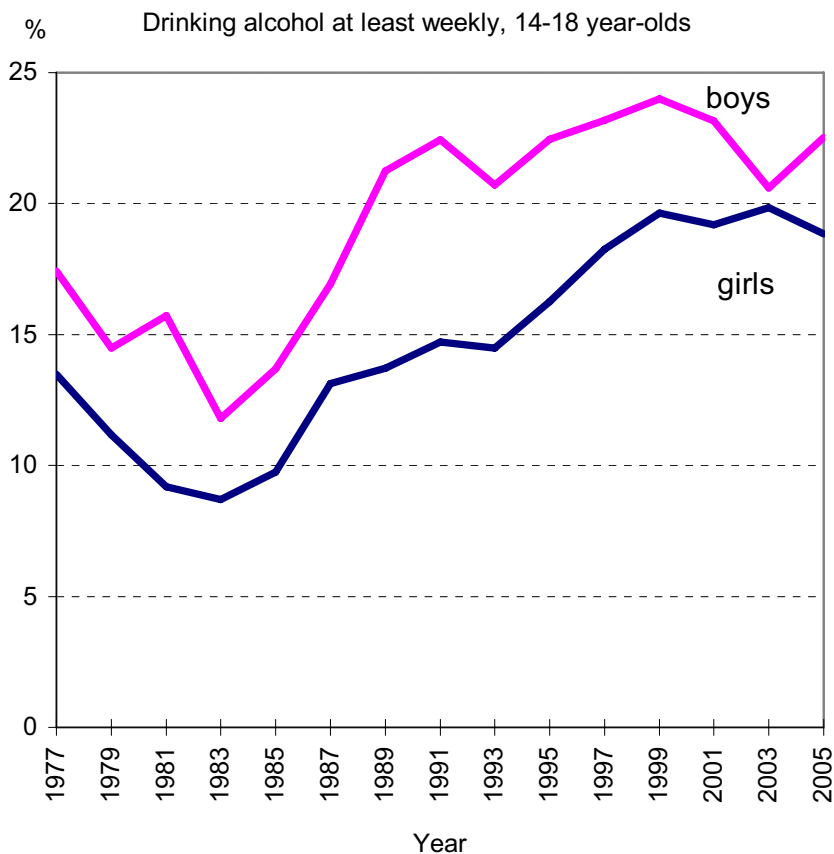


**Figure 11.** Percentage of 12-18-year-olds who drink alcohol at least once a month by age and sex in 1977-2005. Adolescent Health and Lifestyle Survey 2005.

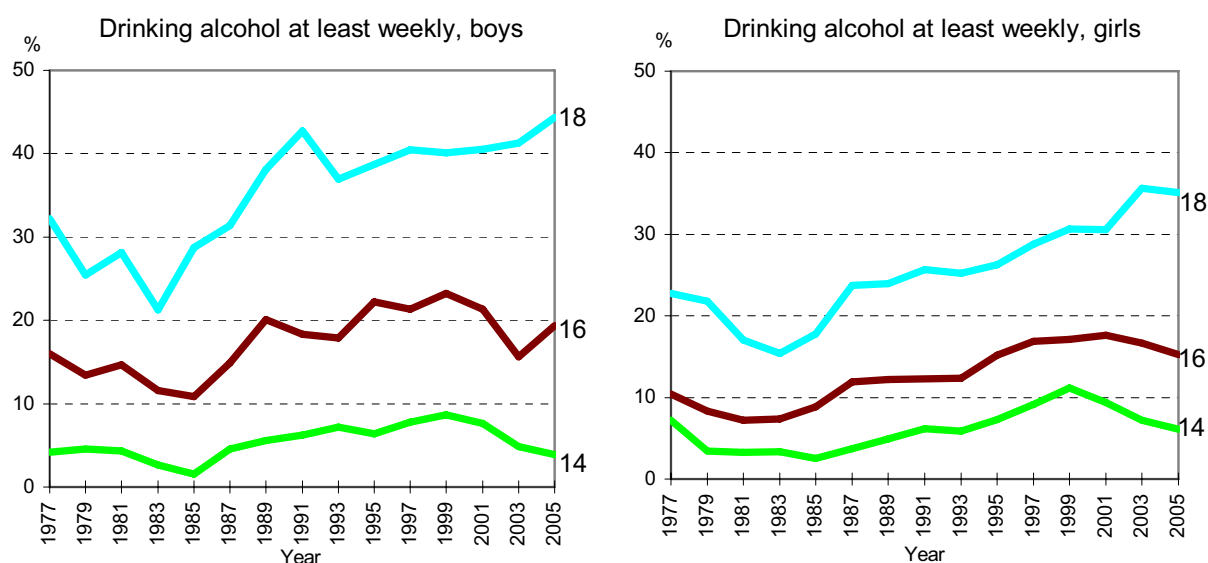
Of the 12-year-old boys responding to the survey in 2005, none reported drinking alcohol at least once a week, and of the females in this age group, only a few (Appendix Table 29). Frequent drinking seemed to belong to a small minority in the 14-year-olds: 6% of girls and 4% of boys reported drinking at least once a week at least small amounts of alcoholic beverages. The prevalence increased with age, with 35% of the girls and 44% of the boys in the 18-year-olds reporting weekly drinking.

In 14-18-year-old girls, a growing trend in the proportions of weekly drinkers continued from the beginning of the 1980s until 2001, and the situation has remained nearly unchanged since (Figure 12, Appendix Table 52). In boys, the growing weekly alcohol use evened out earlier, after 1999, but began to climb again in 2003-2005.

Examining the different age groups separately (Figure 13, Appendix Table 29) we found that weekly drinking increased among the 16- and 18-year-old boys from 2003 to 2005. In the 14-year-old age group, weekly drinking decreased slightly.



**Figure 12.** Age-adjusted percentage of 14-18-year-olds who drink alcohol at least once a week by sex in 1977-2005. Adolescent Health and Lifestyle Survey 2005.



**Figure 13.** Percentage of 14-18-year-olds who drink alcohol at least once a week by age and sex in 1977-2005. Adolescent Health and Lifestyle Survey 2005.

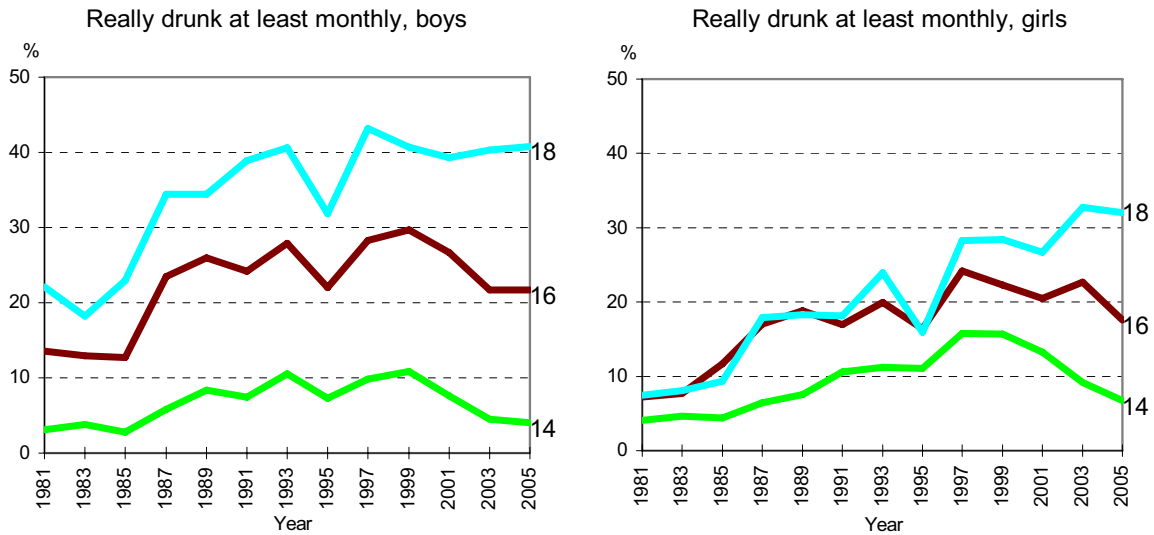
### *Drunkness-oriented drinking*

Drunkness-oriented drinking has been rare among the 12-year-olds throughout the entire review period: in 2005, only seven of 758 respondents reported having ever been really drunk. In the 14-year-olds in 2005, 7% of girls and 4% of boys reported drinking until really drunk once a month or more often (Figure 14, Appendix Table 23). The prevalences of drinking until really drunk in the 16-year-olds were 18% (girls) and 22% (boys), and in the 18-year-olds 32% (girls) and 41% (boys).

The proportions of the 14-18-year-olds reporting monthly drinking until drunk increased from the early 1980s until the end of the 1990s among girls and boys alike, except in 1995, and then began to decline. From 2003 to 2005, the proportion of girls reporting monthly drinking until drunk continued to decrease, but among boys, the decline came to an end (Figure 15).

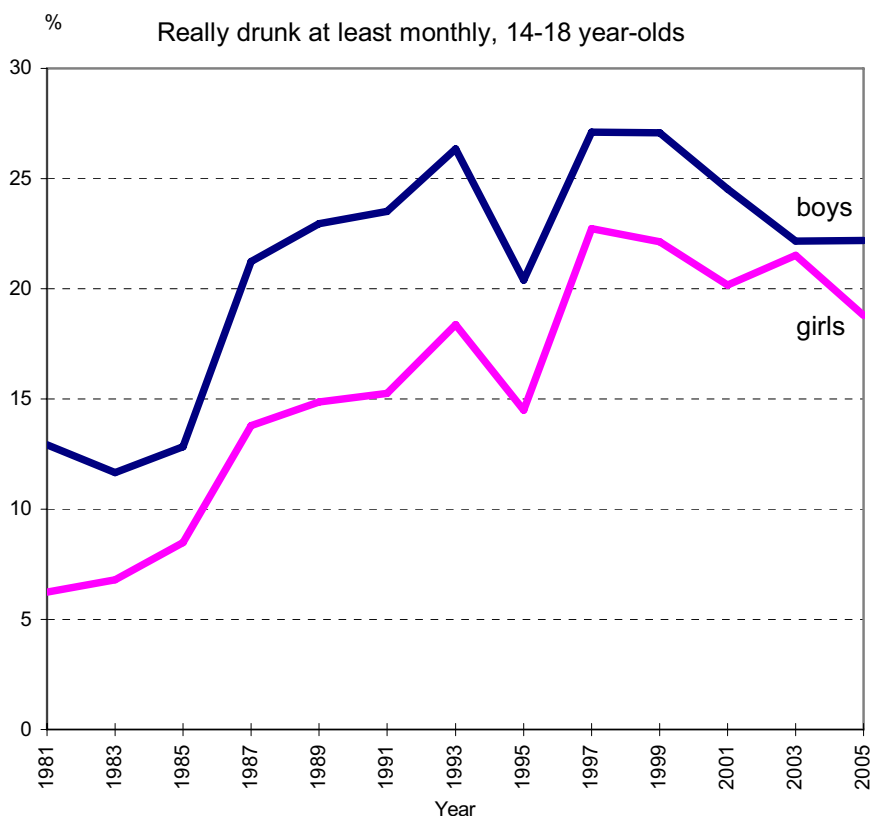
Examining the different age groups (Figure 14, Appendix Tables 30 and 53), it is shown that drunkness-oriented drinking became rarer in the 14- and 16-year-olds between 1997 and 2005. The same phenomenon was also seen from 2003 to 2005 in the 14- and 16-year-old girls, but not in the boys of these age groups. In the 18-year-olds, no changes were found in the proportions of adolescents drinking monthly until really drunk.

The percentage of 18-year-old boys drinking weekly until really drunk indicated a substantial rise from 2003 to 2005. (Appendix Tables 31 and 54): 12% in 2005 compared to 7% in 2003. The 2005 rate was the same as in 1997, when the highest ever alcohol consumption rates were observed among adolescents.



**Figure 14.** Percentage of 14-18-year-olds who get really drunk at least once a month by age and sex in 1981-2005. Adolescent Health and Lifestyle Survey 2005.





**Figure 15.** Age-adjusted percentage of 14-18-year-olds who get really drunk at least once a month by sex in 1981-2005. Adolescent Health and Lifestyle Survey 2005.

### *Alcohol as part of everyday life*

Since 1979, adolescents' opinions on the everyday nature of drinking alcohol have been elicited by means of a statement "Moderate use of alcohol is part of everyday life". The proportions of 12-year-olds agreeing with this statement were considerably higher in 2005 than in the previous years, 55% of the boys and 49% of the girls agreed definitely or to some extent (Appendix Tables 24 and 32). Changes in the other age groups were small.

## SOCIAL EXPOSURE TO ILLEGAL DRUGS

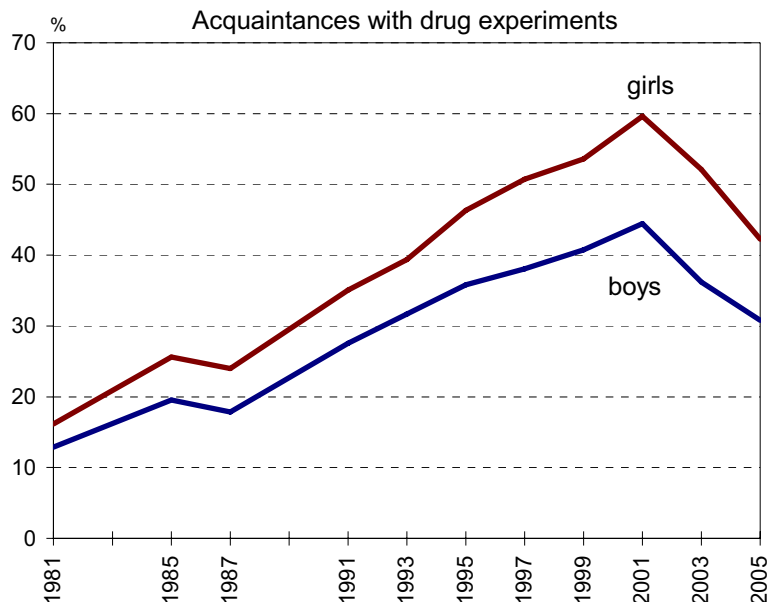
### *Drug use among acquaintances*

A distinct increase in the proportions of 14-18-year-olds knowing at least one drug experimenter among his or her acquaintances was seen from 1987 as far as 2001. Then the proportions began to decrease, and the fall continued from 2003 to 2005 as well (Figures 16 and 17, Appendix Tables 35 and 55). The trend was similar in both sexes and in all age groups except for the 12-year-olds.

In the 12-year-olds, the proportions were small over the entire review period, and changes were negligible (Figure 16, Appendix Tables 35 and 55).

Girls knew drug users more frequently than boys. In 2005, slightly less than a half of the 16-18-year-old girls and slightly less than 40% of the boys knew at least one acquaintance having tried drugs (Appendix Tables 33 and 35). Of the 12-year-olds, only a small percent knew that an acquaintance had tried drugs.

Of the 18-year-olds, 13% knew more than five acquaintances in 2005, compared to 20% in boys and 23% in girls in 2001 (Appendix Tables 36 and 56). Over the same period, the corresponding proportions among the 14- and 16-year-olds halved.



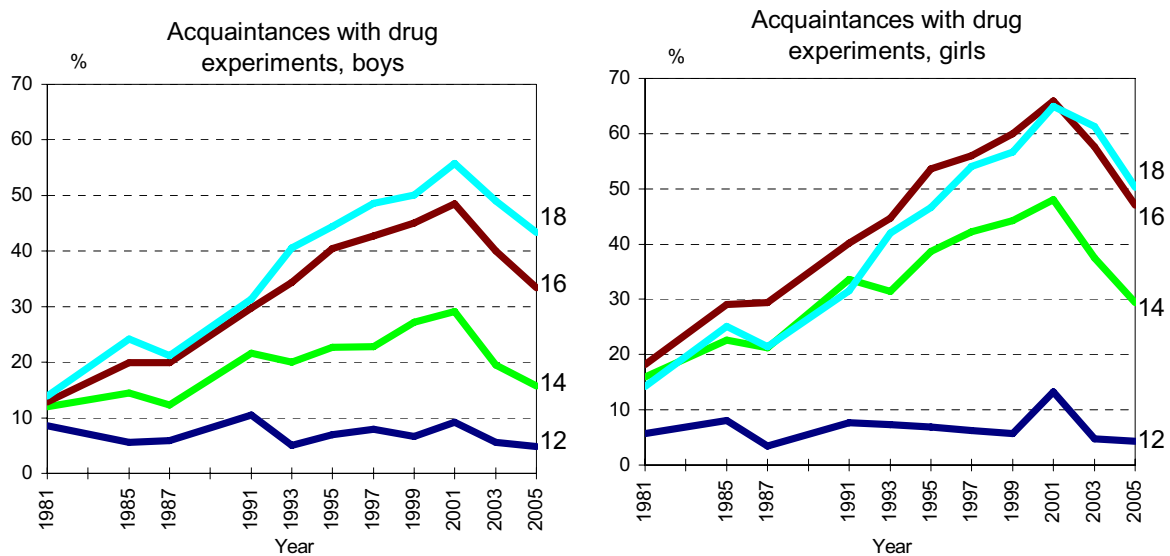
**Figure 16.** Age-adjusted percentage of 14-18-year-olds knowing at least one acquaintance who tried drugs by sex in 1981-2005. Adolescent Health and Lifestyle Survey 2005.

## Drug supply

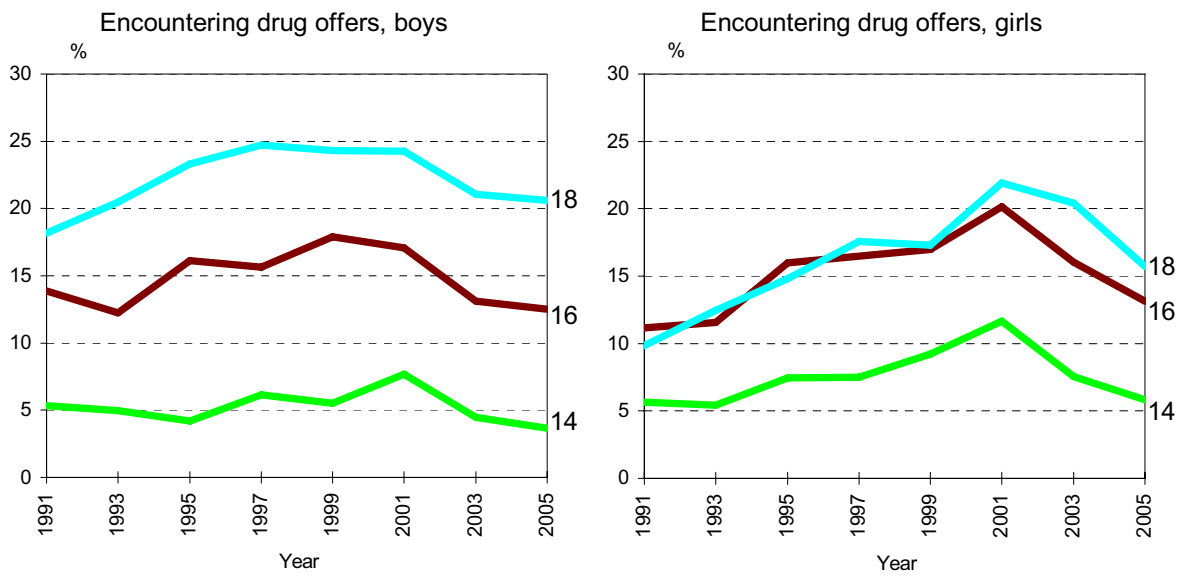
Whether illegal drugs have been offered during the past year has been asked since 1991. Drug offers increased towards the end of the past millennium for 14-18-year-olds, as reported by girls and boys alike, but began to diminish after 2001 (Figure 17, Appendix Table 57).

In 2005, drugs were offered to nearly one-fifth of the 18-year-olds, and to approximately every 20<sup>th</sup> of the 14-year-olds (Appendix Tables 34 and 37). Drugs were offered even to some isolated cases in the 12-year-olds.

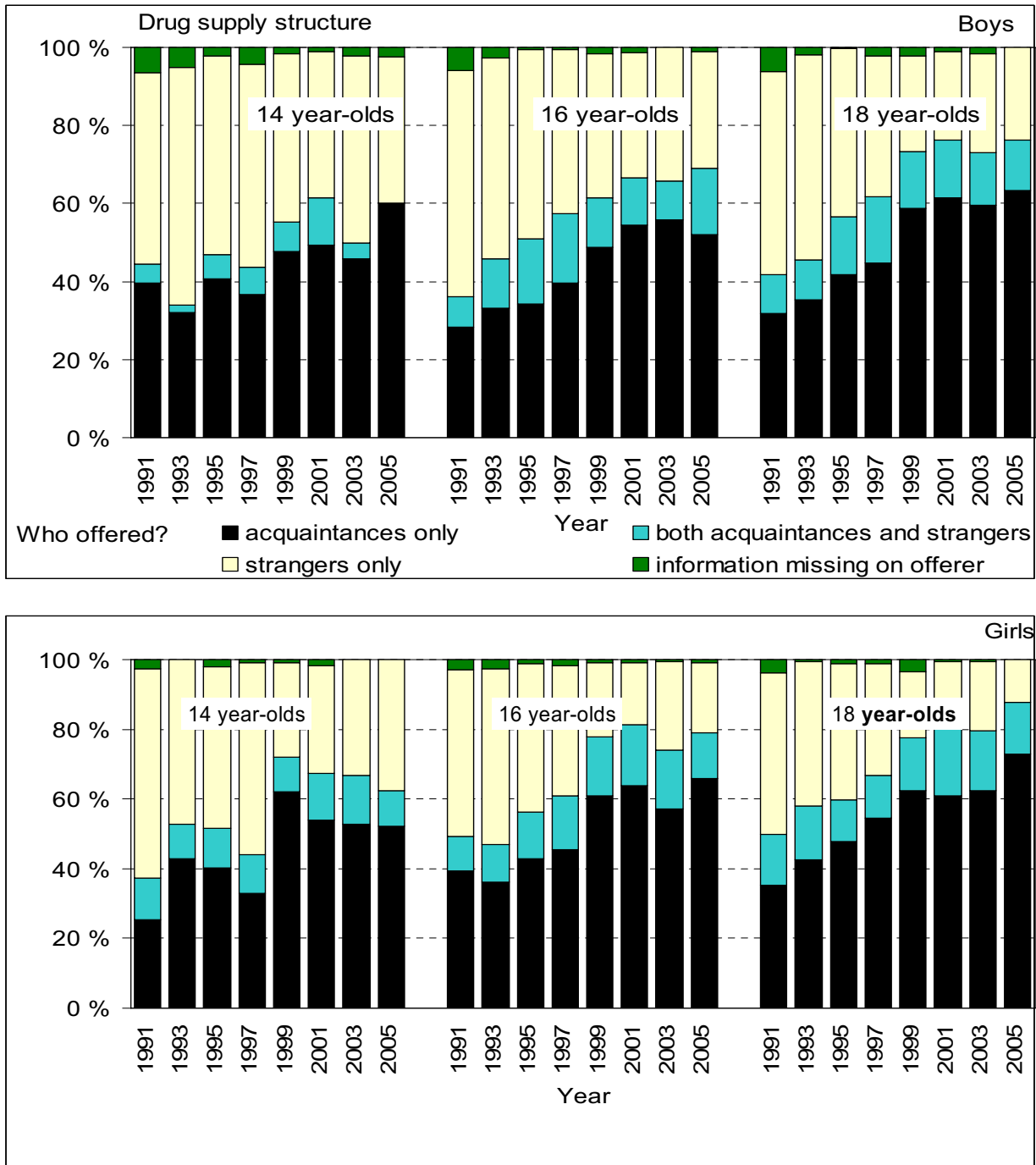
Offers from friends and acquaintances, and complete strangers were elicited separately. The supply structure changed on entering the new decade from the 1990s in that the offers came mainly from acquaintances and not from strangers as was the case in the early 1990s (Figure 18, Appendix Tables 38-39 and 57-59). Between 2003 and 2005, no major change in the supply structure occurred (Figure 18).



**Figure 17.** Percentage of 12-18-year-olds knowing at least one acquaintance who tried drugs by age and sex in 1981-2005. Adolescent Health and Lifestyle Survey 2005.



**Figure 18.** Percentage of 14-18-year-olds who were offered drugs in 1991-2005 by age and sex. Adolescent Health and Lifestyle Survey 2005.



**Figure 19.** Percentage of 14-18-year-olds who were offered drugs during last year according to person who offered in 1991-2005, by age and sex. Adolescent Health and Lifestyle Survey 2005.

## DISCUSSION

### *Teenagers' smoking decreases: experiments and regular smoking are postponed to a later age*

In the youngest age groups of the survey, the proportions of tobacco experimenters have declined linearly and significantly from the end of the 1970s until 2005: in 12-year-old boys from 50% to 17%. In the 14-year-olds, the proportions of daily cigarette smokers are the lowest since the start of the Adolescent Health and Lifestyle Survey monitoring system at the end of the 1970s. At the turn of the new millennium, smoking among adolescents is finally moving to the direction aimed by the health-oriented tobacco policy of the 1970s: tobacco experiments and regular smoking have begun to decrease, the turning point being the first years of the 2000s.

The results of the School Health Promotion Survey, conducted since 1996, confirm our findings about the changes in adolescent smoking (3,5). When two research data, collected independently and using different methods, corroborate each other, we can reliably conclude that teenagers' smoking has significantly decreased.

Our study shows that smoking experiments and regular smoking among the, legally adult, 18-year-olds have remained mainly unaltered. The focal point of change has been the younger teenagers. It can be speculated, however, that when the 12-14-year-old respondents of the 2005 survey reach adulthood, smoking among young adults will also decline. In the following chapters, we discuss several issues underpinning the possibility that smoking in Finland will be a practice of a diminishing minority already in the near future.

The favourable development also contains the observation that smoking among girls has begun to drop. The turning point occurred even earlier among the 14- and 16-year-olds, but now also the 18-year-old girls are smoking less. Overall, sex differences in smoking are minimal.

### *Attitudes towards smoking restrictions are more positive than before: sales ban and smoke-free areas are supported*

The youth support widely the restrictions based on the health-oriented tobacco policy. Sales of tobacco products was restricted already in the 1970s. In 1987, the great majority (83%) of 14-18-year-olds supported the Act banning sales to those under 16 years of age (6). When the age limit was raised to 18 in

1995, only 66% were in favour of the new ban. Later, the situation has fundamentally changed. Today, the ban is supported by nine of ten 14-18-year-olds, and by nearly all of the 12-year-olds. Importantly, banning sales to one's own age group is almost unanimously accepted.

In 1997, the majority of 14-18-year-olds (88%) supported smoke-free areas for non-smokers in coffee shops, bars and restaurants (7). Restrictions on tobacco smoke were enacted for these premises as of 2000. The survey of 2005 indicated a willingness for tighter restrictions among adolescents, even complete smoke-free. Of the 14-18-year-olds 62% and nearly all 12-year-olds were in agreement with the statement "Coffee shops, bars and restaurants should be smoke-free".

Completely smoke-free restaurants and coffee shops are clearly more often supported by the youth than the adults (8). The explanation may be found in that the present day adolescents are used to smoking restrictions and smoke-free premises throughout their lifetime. Hence, these issues are considered a natural feature of the physical environment. The 12-year-olds of today were 7 years of age when smoking restrictions were enforced in restaurants. Another explanation for the more approving attitude of the youth towards smoke-free may derive from the general media discussion in the society about the harm of smoking and pros and cons of smoke-free premises.

### *Exposure to tobacco smoke is diminishing*

Environmental tobacco smoke has been classified as carcinogenic. Smoking restrictions in work places as well as restaurants and coffee shops are based on the health hazards of tobacco smoke. Environmental tobacco smoke may originate from one's own cigarette. In health protection, the emphasis lies on the secondhand tobacco smoke from other individuals that nearby persons are compelled to breathe, so called passive or involuntary smoking.

The proportion of adolescents who become exposed to tobacco smoke has declined to a remarkable degree from at least 1991 when it was studied in the Adolescent Health and Lifestyle Survey for the first time. Then every 10<sup>th</sup> of the 12-year-olds reported exposure to at least an hour of tobacco smoke. In 2005, only one in every hundred reported similar exposure. Even among the 18-year-olds reporting the highest exposures, the proportion had halved (29% vs. 16%). Over 5-hour exposures were reported by only single cases in the 12-year-olds, and by only every 50<sup>th</sup> in the 18-year-olds.

The detrimental health effects of environmental tobacco smoke entered the active public discussion in connection with the law of 1995 restricting smoking in work places, and at the time smoking restrictions for coffee shops and res-

restaurants were enforced in 2000. The latter of the two events may have contributed directly to the decrease in tobacco smoke exposure. An indirect impact of both restrictions may have been the increase in home smoking restrictions, as smokers', particularly parents', awareness of the potential health risks of tobacco smoke on children and others present increased. In addition, the restrictions may have acted as an agent of change encouraging the cessation of smoking.

Smoking in the home is a more important factor than smoking inside public buildings, especially in the younger age groups. Parents' behaviour is decisive. In the 2005 Adolescent Health and Lifestyle Survey (unpublished results), as many as 70% of the 12-year-olds reported that nobody is ever permitted to smoke inside their homes, compared to only one in every 100 reporting that smoking inside the home was free. In comparison, the 16-year-olds reported less restrictions for home smoking: 54% and 5%, respectively. The result indicating that the average exposure to tobacco smoke in the home is low today is the likely explanation for the decrease in adolescents' exposure to environmental tobacco smoke over the past 14 years.

### *Smoking is perceived as an occupation for losers*

Young people had a negative perception of smoking. The majority (abt. 70%) of adolescents supported the statement "Smoking is for losers". The younger was the age group, the likelier was the support, but even among the 18-year-olds, about a half agreed. Uncertainty about one's own attitude to the statement grew with age: the alternative "difficult to say" was chosen by slightly over a quarter by 18-year-olds, but by only one in every 20 of the 12-year-olds.

The recent study of the Cancer Society of Finland likewise reported of negative images associated with smoking. According to 12-17-year-olds, smoking adolescents, as compared to non-smokers, exhibit characteristics like less intelligence, more restlessness, more untidiness, poorer achievements, and less confidence (9). Features considered positive, such as being more social, more fun or more independent, were seldom associated with smokers.

As a phenomenon, attaching negative images to smoking is not new. Already towards the end of the 1970s, in the study of Lasse Kannas, the smoker's image in the minds of young people was more negative than that of the non-smoker's (10). Compared to non-smokers, smokers were described as, e.g., nervous, weak, dumb, poor achievers at school, and slovenly. The differences in the 9<sup>th</sup> graders were, however, not very big. It is notable that, at that time, also positive features were attached to the smoker's image, e.g. leader. Moreover, smokers were considered popular nearly as often as non-smokers.



Image studies conducted at different times are not directly comparable due to different questions and data collection methods. In the Adolescent Health and Lifestyle Survey, the statement about losers was included for the first time in 2005, and, therefore, a direct answer as how the images linked with smoking have changed cannot be given. Given the large proportion of answers agreeing with this statement, and that positive images no longer appeared in the recent survey, may well reflect more negative perceptions of smoking.

### *Several factors explain the decline in smoking*

The factors that explain the decline in teenagers' smoking are examined through four elements: 1) the specific actions of the health-oriented tobacco policy, their direct and indirect impacts; 2) parenting practices; 3) school smoking policies; and 4) youth-specific explanations, such as the changing youth culture.

**Tobacco-specific actions.** Several efforts outlined in the national tobacco policy are likely to have contributed to the decline in adolescent smoking. Raising the age limit for selling tobacco from 16 to 18 years in 1995 resulted in a highly significant decrease of tobacco purchases in the under 18- and, specifically, the 14-year-olds (4). Even if some kiosks and service stations continue to sell tobacco to under-aged youths, the norm endorsed by the adult world manifests itself to the adolescents now more uniform than earlier.

Restricting smoking in coffee shops, restaurants and work places may have had an indirect impact on adolescent smoking. These restrictions contribute to the image of a well founded norm meant for serious consideration, a norm also observed by adults. Both restrictions may have increased smoking restrictions in homes. The messages from the society in support of non-smoking have become more uniform than before.

Overall, the various restrictions have reduced the visibility of smoking. The new youth generations have seen less smokers around them, and are, therefore, less liable to "catch" smoking. Smoking restrictions alone do not, however, suffice to explain the entire phenomenon, for among teenagers, a decline is seen in snuff experiments as well. Instead, they might explain the modest rise of snuff use in 18-year-old boys. As a smokeless tobacco, snuff can be used where smoking is forbidden. This in turn encourages efforts for a more detailed ban on the sale of snuff across the whole European Union, including Sweden. In Finland, selling snuff has been forbidden since 1995. But because of a high traffic between Finland and Sweden where snus (Swedish snuff) can be sold, the product is too easy to obtain in Finland.

Examining the factors contributing to the decreasing trend, we should remember the Smokefree Class competitions targeted at young people and implemented within the entire EU, and the campaigns targeted to youth e.g. through youth magazines. Also, for the first time ever, the large department store chains have contributed to the positive image of non-smoking by means of anti-smoking t-shirts for sale in their clothing departments for young people. New, youth targeted Internet pages have been opened, dealing with issues like smoking cessation.

While several factors have contributed to reduced smoking, the tobacco pricing policy has failed to comply with the health objectives. The actual prices of tobacco products have remained nearly unaltered over the recent years, whereas the purchasing power of adolescents has increased (3,11). It is particularly noteworthy that, despite the lack of support from the pricing policy, adolescent smoking has decreased. Previously, in similar situations, adolescent smoking has remained stable or increased.

**Parenting practices and norms at home.** The parenting practices and “home smoking policies” serve to deliver a fairly unambiguous message to the young about what is permitted and socially acceptable, and what is not. The specific, tobacco related factors inside homes include parents’ and siblings’ own smoking behaviour, attitudes towards smoking, and rules and norms for smoking at home. The substantial decline in exposure to tobacco smoke indicates, especially in the younger age groups, a clear diminish in smoking inside in the homes. In the long run at least, also parental attitudes towards adolescent smoking have undergone changes. In the 1977 Adolescent Health and Lifestyle Survey, when asked “Do your parents allow (or IF you smoked, would they allow) you to smoke at home?”, 80% of the 12-year-olds replied “No”, and by 2005, this rate had risen to 93%. Among the 16-year-olds, the rates were 52% and 71%, respectively (unpublished results).

**School smoking policies.** School influence on adolescent smoking has been relatively well studied. For example, school culture in general, school ethos, and atmosphere in the school community have been found to be associated with smoking among young people. Within a supportive school environment, pursuing a tight no-smoking policy, smoking is reduced (12,13). In Finland, smoking in schools was forbidden by law already in 1977 but problems in the implementation of the legislation became visible in the 1980s. The less permissive atmosphere in schools shifted towards a pro-smoking direction, and a rise in adolescent smoking was noted from the mid-1980s. In the 1990s, smoking was still commonly permitted in schools, and the enforcement of smoking restrictions was nearly absent (14). Entering the 2000s, definite signs of improvement were seen in school smoking policies. According to the School Health Promotion Survey results from 2000-2005 (3), daily smoking among comprehensive school students, whether inside the school building or within

the school grounds, has substantially decreased between 2000 (48%) and 2005 (36%). According to the pupils' answers, smoking restrictions are also better enforced than before, and over 90% of the pupils of the Finnish comprehensive schools reports that smoking is totally forbidden in their school. The School Health Promotion Survey shows that the number of lessons dealing with smoking has clearly increased over the recent years in the 8<sup>th</sup> and 9<sup>th</sup> grades of comprehensive schools (3).

**Explanations associated with youth culture.** The reduction in adolescent smoking as a phenomenon of the 2000s does not seem to be limited to Finland. There is evidence that a similar development during the early years of this decade has occurred in some other Western countries as well. In Sweden, the 9<sup>th</sup> graders of the comprehensive schools have reduced their smoking in the 2000s, the latest research results being from 2005 (15). A recent tobacco study from Canada shows that smoking among 15-19-year-olds began to decrease at the turn of the millennium (16). In the USA, teenagers smoking began to decrease in the mid-1990s, and the same trend continues still in 2004 (17). According to the European substance use survey ESPAD, smoking in 15-16-year-olds has decreased slightly between 1999 and 2003 in 11 of the 28 participating countries, with cigarette smoking in the past 30 days as the key indicator (18). All the Nordic countries belonged to the group reporting decreasing smoking rates.

In assuming that the phenomenon of reduced adolescent smoking may be wider and concern countries other than Finland as well, we need to consider the effects of youth cultures that cross the national borders. At the same time, we must remember that most of the Western countries have for years implemented activities aimed at reducing smoking among young people. For example, discussions on bans related to tobacco advertising in the electronic media or at events like Formula One racing spread over the entire Europe. It appears, therefore, that the impacts of international youth cultures and numerous smoking reduction activities are likely to be inseparably bonded.

Considering the reasons for the increase in non-drinking, Jaana Lähteenmaa (19) has paid attention to the influence of youth cultures. There is evidence that drunkenness-oriented drinking habits are "out", or no longer in fashion. Correspondingly, smoking may be "out", a claim matching well the result that the majority of adolescents regard smokers as losers. In youth, tobacco abstinence is in natural harmony with alcohol abstinence, and, vice versa, the number of smokers abstaining from alcohol is exceedingly small (20).

Tobacco can be examined as a commodity that adolescents can spend their pocket money on. Above, we mention the stability of tobacco prices and the increase in pocket moneys, an equation leading to increased adolescent smoking in the past. Here, the issues associated with youth cultures may rise in im-

portance. It is possible that at least part of the young perceive other commodities, e.g. use of mobile phone, as more salient than tobacco. In the long run, those other popular youth products may surpass tobacco. Despite the lack of individual level evidence of interchange between mobile phones and tobacco in the Finnish literature (21), the possibility exists that the mobile phone, together with other novel commodities, may gradually cultivate an indifference towards tobacco within the youth culture.

Several expert committees and global strategies underline the effectiveness of a comprehensive tobacco control strategy. Over the past years in Finland, the message on a smoke-free society to adolescents has been essentially more uniform than before. Combining this to the possible change in the youth culture provides an understanding as to why teenagers have reduced their smoking in Finland.

*Alcohol abstinence is becoming more common, decrease in recurring alcohol use and drunkenness-oriented drinking has stopped*

Adolescent alcohol use and drunkenness-oriented drinking in particular increased after the early 1980s. Towards the end of the 1990s, the proportions of 14-18-year-olds drinking at least monthly until really drunk were as high as three-fold compared to the early 1980s. At the turn of the millennium, the climbing trends in adolescent alcohol use and drunkenness-oriented drinking came to a stop, and a downward trend began in the 12-14-year-olds and the 16-year-old boys.

With this positive development well under way, a market-based change to the Finnish alcohol policy was implemented that in view of the existing knowledge contained the elements of an increase in alcohol consumption. After Estonia joined the EU, alcohol import quota were removed between the countries, and, aiming to control imports, taxes on alcohol were appreciably lowered. As a result of these decisions, access to alcohol became easier and the prices were reduced simultaneously.

After one year from the enforcement of the policy changes, two changes can be noted in the trends of adolescent alcohol use: prevalence of non-drinking continues to rise among young people, but the falling trends of recurring alcohol use and drunkenness-oriented drinking have stopped. In 18-year-old boys, recurrent drunkenness-oriented drinking has increased. This is corroborated by the School Health Promotion Survey showing that abstinence has increased and drunkenness-oriented drinking has become more common among the upper secondary school aged (16-19 yrs) adolescents (3,11).

The alcohol tax reductions focused on strong spirits. Adolescents in turn consume two-thirds of their alcoholic beverages, measured as volumes of pure alcohol, in the form of beer, cider and long-drinks (22). This factor may explain why alcohol use did not increase in 12-16-year-olds. Possible changes in the popularity of different alcohol beverage types are not known yet. For adolescents, the grading of tax changes in spring 2004 was a better solution than equal price cuts.

The impact of lower prices was indeed seen in the amount of alcohol consumed and in the frequency of drinking among those adolescents whose alcohol drinking had already become a habit. For the oldest age group, 18 yrs, it is also legal to purchase alcohol, and access to strong spirits is likewise easier in this age group compared to minors. That recurring alcohol use in boys of this age group increased was expected, while among girls, it remained on the same high level as reached over the past 15 years. Considering the health of young men and women, alcohol tax reductions contributed to undesired development.

In most of the European countries, the trend in alcohol use has been declining or stable, and no increase has been observed except in the Eastern European states (18). The ESPAD Survey on Alcohol and Other Drugs, involving 35 European states, reports that the consumption of alcohol among 15-16-year-olds has remained principally unaltered between 1999 and 2003 (18). In the USA, prevalence of teenagers alcohol consumption has been declining in 2001-2003 (23), although, in contrast, the data from 2004 indicate a rise in drunkenness-oriented drinking in older school-age groups (12<sup>th</sup> graders) (17). A similar, mild decline also concerns the trend in illegal drug use in the USA. In Sweden, a small decrease was likewise seen in school-aged children's drinking habits over the past years (15). In this respect, Finland is not essentially different from other European development.

The general climate and attitude change during more than two decades is clearly reflected in the 12-year-olds' responses to the statement "Moderate use of alcohol is part of everyday life". In the 2000s, the 12-year-olds' views have become remarkably more supportive of the statement; over a half of them agreed with it compared to only one-third in 1999. Despite such a vehement change of opinions, the 12-year-olds have not increased their own alcohol use, on the contrary, the proportions of non-drinkers have increased. This seemingly contradictory result may be interpreted as follows: alcohol use is not considered as part of everyday life for persons of their own age, but rather as an activity for adults and the somewhat older age groups.

According to Lähteenmaa (19), youth culture related issues should be taken into account notably when discussing the increase in alcohol abstinence. Several, though probably small in size, youth groups advocating abstinence may have influenced the mainstream adolescents through introduction of alcohol

abstinence as an alternative worth considering. The author gives examples of non-drinking adolescents, like the straight-edgers whose ideology calls for abandoning hedonism, and muslim immigrants.

From a short-term perspective, the reduced alcohol prices seem to have minor consequences than expected. Lower taxation of alcohol together with the lifting of the import quota raised broad discussions in the media about the adverse social and health effects of alcohol. This may have intensified efforts in upbringing practices and child control, not only in schools but especially by parents. So far, the more intensive practices in homes, and schools have provided, at least short-term, support through the changes in the Finnish alcohol policy. This statement is underpinned by the increase in alcohol abstinence in particular, and by the positive development concerning alcohol use in 12-14-year-olds who are still very much within the influence of home as compared to 16-18-year-olds. Although the effects of reduced alcohol taxation have not reached the worst of the threatening visions yet, there is no guarantee that the positive development in the younger age groups continues. The rising prevalence of drunkenness-oriented drinking attitudes in the older adolescents may be readopted by the younger age groups as well. Overall, from the standpoint of adolescent well-being, raising the alcohol taxation would be a well-founded step to take.

### *Drugs are encountered more rarely than before*

Use of illegal drugs has not been directly measured in the Adolescent Health and Lifestyle Survey. A question with such content is not suitable for a mail questionnaire sent to recipients' home address. Instead, social exposure to drugs gives a good insight into the evolution of the drug situation. Social exposure refers to knowledge about drug experiments within one's own circle of acquaintances, and to encounters with drug offerers. When the questions are repeated identically, the changes in the percentages indicate changes in the drug situation, even if they do not indicate drug experiments or use directly.

Social exposure to drugs was rare in Finland at the early 1980s. By 1991, the proportions of exposures had doubled compared to 1981. The growth continued consistent until 2001, after which a decrease in the exposure to drugs was seen for the first time in the two-decade long survey records. The same trend continued also from 2003 to 2005. In the School Health Promotion Survey, also drug experiments have been directly elicited, and the results corroborate that drug experimenting and use have declined among young people (3). In addition, the Finland Drug Situation 2004 report (24) concludes that drug use seems to have stopped increasing.

The composition of drug offerers underwent a gradual change during the 1990s in that the majority of offerers, to 18-year-olds and 16-year-old girls in particular, were acquaintances and friends. This pattern has remained unchanged until today. Drugs have become part of adolescents' everyday life instead of being accessible via strange drug dealers.

### *Promotion of well-being among children and adolescents*

The results of the Adolescent Health and Lifestyle Survey regarding both smoking and drug experimenting reflect a parallel positive development. Furthermore, non-drinking has increased, the only exception being the trend in the drunkenness-oriented drinking habits of the older adolescents, to which the obvious explanation is the alcohol price policy. The decrease in smoking is clearly associated with tobacco-specific factors, but the mainly parallel development of three different behaviours indicates a general change in the well-being of children and adolescents. Until the turn of the millennium, the trends indicated a decrease in well-being, but the results of the recent years indicate an increase.

The entire Finnish society, from state government to homes became worried about the decreasing well-being among children and adolescents towards the end of the 1990s. The growing numbers in waiting lists for child psychiatry and the increasing burden on child welfare services and on remedial/special education, together with the results indicating a higher prevalence of drunkenness-oriented drinking and drug experiments lead to extensive national and local discussions and intensified activities to benefit young people. The importance of this phenomenon was deliberated on already in connection with the publication of the 2003 results of the Adolescent Health and Lifestyle Survey (2). The active discussion on the role of schools and parents in electronic media, press and professional magazines combined with the survey results were likely to influence the parental and school approach to their responsibility in children's upbringing. The joint activities of the several different fronts might explain why the positive changes emerged more clearly in the younger age groups.

### *Will the goals of the Health 2015 Public Health Programme be achieved?*

The Health 2015 Public Health Programme contains the latest objectives for health promotion within the Finnish national health policy. The Programme also defines the objectives for adolescent smoking and drug and alcohol use (1).

The Health 2015 Programme aims at reducing 16-18-year-olds' smoking to 15%, but the target was not specified separately for the younger age groups. Regarding the smoking status of 16-year-olds and younger, the past two years indicate a clear direction towards the Health 2015 Programme goal. In the event that the initiation of regular smoking among today's 12-14-year-old cohort is not only postponed but actually remains on a lower level than before, reaching the goal of reduced smoking among 16-18-year-old adolescents is possible by the year 2015.

The targets for alcohol were not as detailed as for smoking reduction. The Health 2015 Public Health Programme calls for reduction of alcohol related health problems in young people to the level of the early 1990s. As a concrete indicator, the Programme presented the reduction of monthly drunkenness-oriented drinking to a lower level than reported in the Adolescent Health and Lifestyle Survey of 1991. The decreasing levels shown for recurrent alcohol drinking and for drunkenness-oriented drinking in the younger age groups indicate that this target may likewise be achievable in the under 18-year-olds, perhaps even exceedable, if the positive development now occurring can be maintained.

In contrast, tax reductions on alcoholic beverages together with the lifting of alcohol import quota have enhanced recurrent alcohol use in 18-year-old boys. If this trend cannot be stopped, e.g. by raising the taxes again, the adverse effects will increase among the older adolescents.

In addition to alcohol related health problems, the Health 2015 Programme listed illegal drug related health problems and their objectives, assuming that the problems would be no higher than the level of the early 1990s. The concrete indicator was defined as the social exposure to drugs. At present, social exposure to drugs and the proportion of those who have been offered drugs have begun to decline. Thus, we are approaching the target.

When assessing the possibilities to reach the targets of the Health 2015 Programme concerning reduction of smoking and drug experiments, our conclusion is substantially more positive today than in the beginning of the decade. At present, it seems quite possible that the targets can be achieved. Concerning alcohol related adverse effect, however, the situation is considerably more uncertain owing to alcohol price reductions and easier access to alcohol.

### *Methodological considerations*

In the inference of time series, it is essential that the methods used to measure change are comparable over time. Regarding the Adolescent Health and Lifestyle Survey, efforts to ensure the comparability of results between study years



were made by means of maintaining the questions and principles of sample selection unaltered, keeping the chronological ages as identical as possible, and keeping the data collection methods and time of the surveys unchanged each year.

Considering the reliability of time trends, the most problematic thing is the steady decline in response activity, now commonly seen in postal surveys in Finland, too. The decline was deepest in the 16-18-year-old boys. From 2003 to 2005, the response rate fell by three percentage points, seen, contrary to previous years, mainly among girls. The growing proportion of non-respondents, may have an impact on trends of tobacco and alcohol use, and not only on the proportion of users in a single survey. In the Appendix 2, we estimate how the lowering response rate has impacted the trends of the main indicators. The conclusion is that the lowering response rate does not change the direction of the trend in any single indicator, either over the entire study period or between 2003 to 2005. But the prevalence rates of smoking, snuff use, frequency of alcohol use, and drunkenness-oriented drinking are under-rated in each survey because of the selection of the non-respondents. Compared with the School Health Promotion Survey, the 14-year-old participants in the Adolescent Health and Lifestyle Survey are a few months older, and the Adolescent Health and Lifestyle Survey is conducted a couple of months earlier in the year. Conducted in schools instead of homes, the School Health Promotion Survey shows higher smoking and alcohol rates when comparing the corresponding indicators from the same years. The differences are more obvious in boys than in girls. The response rates in the School Health Promotion Survey are approx. 90%. Unlike in smoking and alcohol use, hardly any non-response bias could be estimated in the prevalence rates of non-drinkers and social exposure to drugs.

The reliability of the trends reported here is improved when compared with trends reported in the School Health Promotion Survey (3,11). All the trends are parallel concerning smoking, alcohol use and drugs.

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## APPENDIX TABLES

**Appendix table 1.** Smoking in 2005, by age and sex (%). Adolescent Health and Lifestyle Survey.

	BOYS				GIRLS			
	12	14	16	18	12	14	16	18
Never tried	83	59	33	22	88	56	33	22
Tried only one cigarette	11	16	15	9	7	15	13	9
Smoked 2-50 cigarettes in one's lifetime	5	15	21	22	4	17	22	23
Smoked over 50 cigarettes in one's lifetime	0	2	7	12	0	2	6	13
Smokes 1-9 cigarettes daily	-	4	8	10	-	7	15	17
Smokes over 9 cigarettes daily	1	3	15	24	0	3	12	16
Total	100	100	100	100	100	100	100	100
N	392	1080	802	675	411	1174	979	932
Missing data, N	3	12	4	6	7	15	6	5

**Appendix table 2.** Snuff experiments in 2005, by age and sex (%). Adolescent Health and Lifestyle Survey.

	BOYS				GIRLS			
	12	14	16	18	12	14	16	18
Never tried	99	91	74	58	99	97	90	84
Has tried once	0	5	7	10	1	2	7	10
Has used snuff 2-50 times	1	3	14	21	-	1	3	5
Has used snuff over 50 times	-	1	5	11	-	-	0	0
Total	100	100	100	100	100	100	100	100
N	392	1089	804	680	416	1182	983	935
Missing data, N	3	3	2	1	2	7	2	2

**Appendix table 3.** Current use of snuff in 2005, by age and sex (%). Adolescent Health and Lifestyle Survey.

	BOYS				GIRLS			
	12	14	16	18	12	14	16	18
Not at all	100	98	93	88	100	99	99	99
Occasionally	-	2	5	9	-	1	1	1
Once a day or more often	-	0	1	2	-	-	0	-
Total	100	100	100	100	100	100	100	100
N	384	1077	794	671	410	1170	971	929
Missing data, N	11	15	12	10	8	19	14	8

**Appendix table 4.** Type of tobacco among daily tobacco users in 2005, by age and sex (%). Adolescent Health and Lifestyle Survey.

	BOYS			GIRLS		
	14	16	18	14	16	18
Only manufactured	58	65	80	66	74	84
Only self-rolled	8	10	5	4	7	5
Both manufactured and self-rolled	34	24	15	31	19	11
Other		1				0
Total	100	100	100	100	100	100
N	80	188	231	114	262	305
Missing data, N	3	7	10	3	8	0

**Appendix table 5.** Daily consumption of cigarettes (total number of manufactured and self-rolled cigarettes, pipefuls and cigars) among daily cigarette smokers in 2005, by age and sex. Adolescent Health and Lifestyle Survey.

	BOYS			GIRLS		
	14	16	18	14	16	18
Mean	9.3	11.2	13.4	7.9	9.4	9.5
N	80	188	231	114	262	305

**Appendix table 6.** Statement "It is right that sale of tobacco to under 18 is forbidden." in 2005, by age and sex (%). Adolescent Health and Lifestyle Survey.

	BOYS				GIRLS			
	12	14	16	18	12	14	16	18
Definitely agree	90	74	57	73	90	70	61	83
Agree to some extent	7	14	20	14	7	17	23	11
Difficult to say	2	6	9	7	2	6	7	3
Slightly disagree	1	3	9	4	0	4	6	2
Definitely disagree	1	3	5	2	1	2	3	1
Total	100	100	100	100	100	100	100	100
N	394	1082	803	678	413	1188	982	935
Missing data, N	1	10	3	3	5	1	3	2

**Appendix table 7.** Statement "Smoking is for losers." in 2005, by age and sex (%). Adolescent Health and Lifestyle Survey.

	BOYS				GIRLS			
	12	14	16	18	12	14	16	18
Definitely agree	73	49	31	26	63	39	26	21
Agree to some extent	15	24	25	22	20	28	30	27
Difficult to say	8	16	23	25	13	19	22	26
Slightly disagree	2	7	11	14	4	9	13	15
Definitely disagree	1	4	10	13	0	5	9	11
Total	100	100	100	100	100	100	100	100
N	394	1084	802	676	412	1183	984	934
Missing data, N	1	8	4	5	6	6	1	3



**Appendix table 8.** Statement "Coffee shops, bars and restaurants should be smokeless." in 2005, by age and sex (%). Adolescent Health and Lifestyle Survey.

	BOYS				GIRLS			
	12	14	16	18	12	14	16	18
Definitely agree	71	52	34	23	68	45	35	26
Agree to some extent	17	23	25	25	24	29	27	28
Difficult to say	7	15	20	16	6	13	14	12
Slightly disagree	3	7	11	19	3	9	15	20
Definitely disagree	1	3	10	17	0	4	8	14
Total	100	100	100	100	100	100	100	100
N	389	1074	792	672	416	1182	982	934
Missing data, N	6	18	14	9	2	7	3	3

**Appendix table 9.** Percentage of adolescents who have tried tobacco in 1977-2005, by age and sex. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
<b>BOYS</b>															
12	50	47	47	45	37	35	38	42	35	33	33	30	30	18	17
14	68	71	67	66	68	62	64	67	64	62	63	60	56	47	41
16	80	78	83	81	77	78	78	80	76	81	75	78	73	67	67
18	84	86	85	87	81	83	84	85	81	85	84	83	82	82	77
<b>GIRLS</b>															
12	32	27	27	24	23	20	20	24	24	26	25	21	23	12	13
14	60	58	60	60	58	57	57	63	59	63	66	64	58	50	44
16	77	76	76	78	75	77	74	78	78	78	78	81	78	75	67
18	79	83	81	80	82	82	81	84	79	82	81	83	81	82	78

**Appendix table 10.** Percentage of adolescents using tobacco products daily in 1977-2005, by age and sex. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
<b>BOYS</b>															
12	1	1	3	1	.	1	1	1	2	1	1	0	1	1	1
14	11	9	16	15	.	15	17	14	15	12	14	12	13	7	8
16	30	25	31	28	.	34	37	33	30	31	27	30	31	25	24
18	41	34	37	36	.	38	39	37	37	37	36	36	36	37	36
<b>GIRLS</b>															
12	2	1	1	1	.	0	1	1	1	1	-	0	1	-	0
14	15	9	12	13	.	10	13	15	13	13	17	17	15	11	10
16	27	25	26	24	.	29	29	27	26	26	28	30	31	30	27
18	32	26	26	25	.	33	30	28	25	28	28	30	32	36	33

**Appendix table 11.** Percentage of adolescents smoking cigarettes daily in 1977-2005, by age and sex. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
<b>BOYS</b>															
12	1	1	2	1	1	1	1	1	2	1	1	0	1	1	1
14	11	9	15	15	13	14	16	14	15	12	14	12	13	7	7
16	30	25	30	27	28	33	36	32	29	30	26	28	29	23	23
18	41	33	36	34	32	37	38	36	35	35	33	34	33	35	34
<b>GIRLS</b>															
12	1	1	1	1	0	0	1	1	1	1	-	0	1	-	0
14	15	9	12	13	10	10	13	15	13	13	17	17	15	11	10
16	27	25	25	23	25	28	29	27	26	26	27	30	31	29	27
18	32	26	26	25	25	32	29	28	25	28	28	30	31	35	33

**Appendix table 12.** Percentage of adolescents smoking over 9 cigarettes daily in 1977-2005, by age and sex. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
<b>BOYS</b>															
12	0	0	0	-	0	0	1	-	1	1	-	-	-	0	1
14	3	2	4	4	5	7	7	7	6	5	6	5	6	3	3
16	15	13	17	18	18	20	25	21	19	19	16	18	18	15	15
18	30	24	26	25	25	29	30	28	26	26	24	25	25	24	24
<b>GIRLS</b>															
12	1	-	-	0	0	-	-	0	0	-	-	-	-	-	0
14	3	3	3	5	3	3	6	7	5	4	5	7	6	4	3
16	10	9	8	10	14	12	13	15	11	12	12	13	15	14	12
18	14	12	12	13	15	20	14	17	16	16	15	16	18	20	16

**Appendix table 13.** Percentage of adolescents who have experimented with snuff in 1981-2005, by age and sex. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
<b>BOYS</b>															
12	.	.	6	4	.	4	3	2	2	1	2	2	1	1	1
14	.	.	13	18	.	14	16	10	13	14	16	18	16	9	9
16	.	.	22	24	.	28	30	27	29	30	32	38	41	30	26
18	.	.	21	27	.	32	35	38	37	38	41	45	44	44	42
<b>GIRLS</b>															
12	.	.	1	1	.	1	0	1	0	0	0	0	0	-	1
14	.	.	4	3	.	4	2	3	3	3	6	6	6	4	3
16	.	.	7	7	.	7	9	7	6	8	12	12	15	12	10
18	.	.	5	9	.	11	14	9	7	11	14	16	19	18	16

**Appendix table 14.** Percentage of adolescents using snuff occasionally or daily in 1981-2005, by age and sex. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
<b>BOYS</b>															
12	.	.	0.9	-	.	0.5	0.3	0.5	0.3	0.3	0.7	0.5	-	0.3	-
14	.	.	2.5	2.4	.	2.8	3.4	1.9	2.3	3.5	4.3	4.9	3.5	1.3	1.9
16	.	.	4.2	3.2	.	5.3	7.3	4.3	4.6	6.5	7.4	12.1	12.3	7.1	6.7
18	.	.	2.4	5.1	.	3.9	7.1	7.0	7.1	7.1	9.7	11.1	11.4	8.5	11.6
<b>GIRLS</b>															
12	.	.	-	0.2	.	0.3	-	0.3	-	0.2	-	-	-	-	-
14	.	.	0.4	-	.	0.3	-	0.5	0.4	0.2	0.5	0.9	0.7	0.5	0.5
16	.	.	0.2	0.2	.	0.6	0.3	0.2	0.2	0.5	1.2	0.9	1.1	0.6	1.0
18	.	.	0.4	-	.	0.6	0.5	0.5	0.2	0.4	0.7	0.7	0.7	0.9	0.9

**Appendix table 15.** Average daily consumption of cigarettes (total number of manufactured and self-rolled cigarettes, pipefuls and cigars) among daily cigarette smokers in 1977-2005, by age and sex. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
<b>BOYS</b>															
14	7.5	7.4	7.6	7.9	9.7	9.4	9.4	9.4	9.2	9.0	9.6	9.2	9.5	11.0	9.3
16	9.9	10.6	10.1	11.8	11.7	11.3	12.4	12.9	11.3	11.5	11.5	12.0	11.7	12.1	11.2
18	13.3	13.3	12.4	12.9	14.4	13.7	14.2	14.1	13.2	12.5	13.4	13.6	13.3	13.3	13.4
<b>GIRLS</b>															
14	5.2	7.1	6.2	6.9	7.6	7.4	8.6	9.2	7.5	7.2	7.4	9.0	8.2	8.8	7.9
16	7.9	8.3	6.8	8.9	10.7	8.3	9.0	10.3	8.7	9.0	8.8	9.6	9.8	9.9	9.4
18	8.8	9.2	8.8	9.7	10.5	10.6	9.5	10.8	11.3	10.3	10.0	10.0	10.1	10.0	9.5

**Appendix table 16.** Percentage of adolescents smoking self-rolled cigarettes among daily cigarette smokers in 1977-2005, by age and sex. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
<b>BOYS</b>															
14	36	36	23	35	27	20	18	19	30	35	52	52	42	47	41
16	25	34	16	17	18	18	10	20	24	31	43	45	37	40	35
18	22	20	13	13	17	9	7	9	20	25	32	33	39	29	22
<b>GIRLS</b>															
14	28	13	17	18	16	11	5	13	12	22	31	37	37	43	36
16	18	16	8	7	11	8	5	9	12	23	31	34	31	32	26
18	11	11	9	6	7	6	3	3	11	19	22	19	24	17	16

**Appendix table 17.** Percentage of adolescents exposed daily to tobacco smoke in 2005, by age and sex. Adolescent Health and Lifestyle Survey.

	BOYS				GIRLS			
	12	14	16	18	12	14	16	18
Not at all	96	83	69	56	94	77	66	62
Less than 1 h / day	3	13	22	28	4	16	21	24
1-5 hrs / day	1	3	8	13	1	5	10	12
Over 5 hrs / day		1	2	2	0	2	3	2
Total	100	100	100	100	100	100	100	100
N	2	13	6	5	9	13	5	0
Missing data, N	393	1079	800	676	409	1176	980	937

**Appendix table 18.** Percentage of adolescents exposed daily to tobacco smoke for at least one hour in 1991-2005, by age and sex. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
<b>BOYS</b>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
12	.	.	.	.	.	.	.	11	9	5	5	.	3	2	1
14	.	.	.	.	.	.	.	17	13	10	9	.	7	4	4
16	.	.	.	.	.	.	.	24	20	17	14	.	13	12	10
18	.	.	.	.	.	.	.	29	23	22	18	.	16	16	16
<b>GIRLS</b>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
12	.	.	.	.	.	.	.	11	6	7	7	.	4	3	1
14	.	.	.	.	.	.	.	17	16	12	12	.	10	8	7
16	.	.	.	.	.	.	.	24	18	18	17	.	14	15	13
18	.	.	.	.	.	.	.	21	19	17	15	.	13	19	14

**Appendix table 19.** Percentage of adolescents exposed daily to tobacco smoke for over five hours in 1991-2005, by age and sex. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
<b>BOYS</b>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
12	.	.	.	.	.	.	.	4	4	2	1	.	1	0	-
14	.	.	.	.	.	.	.	5	4	4	3	.	2	1	1
16	.	.	.	.	.	.	.	6	6	5	3	.	3	3	2
18	.	.	.	.	.	.	.	9	6	5	4	.	2	5	2
<b>GIRLS</b>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
12	.	.	.	.	.	.	.	5	2	4	4	.	1	1	0
14	.	.	.	.	.	.	.	7	6	5	4	.	3	3	2
16	.	.	.	.	.	.	.	9	6	6	5	.	3	3	3
18	.	.	.	.	.	.	.	9	7	6	3	.	3	3	2

**Appendix table 20.** Statement "It is right that sale of tobacco to under 18 is forbidden." Percentage of adolescents agreeing with the statement definitely and to some extent in 1995-2005, by age and sex. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
<b>BOYS</b>															
12	.	.	.	.	.	.	.	.	.	88	93	92	.	97	96
14	.	.	.	.	.	.	.	.	.	68	74	77	.	87	88
16	.	.	.	.	.	.	.	.	.	52	64	65	.	71	77
18	.	.	.	.	.	.	.	.	.	76	82	83	.	85	87
<b>GIRLS</b>															
12	.	.	.	.	.	.	.	.	.	91	92	94	.	99	97
14	.	.	.	.	.	.	.	.	.	67	72	72	.	82	88
16	.	.	.	.	.	.	.	.	.	54	65	71	.	75	84
18	.	.	.	.	.	.	.	.	.	81	85	88	.	92	94

**Appendix table 21.** Age of drinking alcohol for the first time in 2005, by age and sex (%). Adolescent Health and Lifestyle Survey.

	BOYS				GIRLS			
	12	14	16	18	12	14	16	18
Has never drunk alcohol	87.8	52.8	18.4	6.1	89.8	42.1	16.4	5.5
At 5-years of age	0.5	0.3	1.0	0.6	0.2	0.6	-	0.1
6-yrs	-	0.5	1.0	0.6	-	0.1	-	0.3
7-yrs	0.8	0.7	1.6	0.9	0.2	0.6	0.3	
8-yrs	2.1	0.7	0.6	1.6	0.2	0.9	0.1	0.4
9-yrs	1.3	1.2	0.6	0.9	1.0	0.9	0.4	0.3
10-yrs	2.7	4.6	4.3	2.8	2.2	2.8	2.8	2.1
11-yrs	1.3	3.3	3.4	3.6	1.7	3.6	3.8	1.9
12-yrs	-	11.2	9.4	10.7	4.5	12.2	11.7	13.2
13-yrs	-	15.3	17.8	16.5	-	24.3	25.1	26.2
14-yrs	-	9.5	19.3	19.7	-	11.9	21.2	22.8
15-yrs	-	-	18.9	18.6	-	-	15.2	14.4
16-yrs	-	-	3.6	9.8	-	-	3.0	7.7
17-yrs	-	-	-	4.9	-	-	-	3.8
18-yrs	-	-	-	2.5	-	-	-	1.2
Total	100	100	100	100	100	100	100	100
N	376	1048	788	671	402	1162	966	931
Missing data, N	19	44	18	10	16	27	19	6

**Appendix table 22.** Frequency of alcohol use in 2005, by age and sex (%). Adolescent Health and Lifestyle Survey.

	BOYS				GIRLS			
	12	14	16	18	12	14	16	18
Daily	0	0	1	3	0	0	0	0
A couple of times a week	0	1	7	19	0	2	6	14
Once a week	0	3	12	22	1	5	9	21
A couple of times a month	1	7	19	24	1	9	21	30
About once a month	1	4	12	9	0	7	13	14
About once in a couple of months	1	7	9	8	1	8	13	6
3–4 times a year	1	10	11	4	2	11	10	5
Once a year or less often	7	11	7	2	4	12	7	2
I do not drink alcohol	89	58	22	8	91	46	21	8
Total	100	100	100	100	100	100	100	100
N	359	1054	790	672	394	1160	976	933
Missing data, N	36	38	16	9	24	29	9	4

**Appendix table 23.** Frequency of drinking alcohol until really drunk in 2005, by age and sex (%). Adolescent Health and Lifestyle Survey.

	BOYS				GIRLS			
	12	14	16	18	12	14	16	18
Once a week or more often	-	0	5	12	-	1	4	7
About 1–2 times a month	0	4	17	28	-	5	14	25
Less often	1	14	34	40	1	18	39	41
Never	11	25	22	11	8	29	22	19
Total	100	100	100	100	100	100	100	100
N	363	1060	790	674	395	1166	973	934
Missing data, N	0	1	2	0	0	2	0	1

**Appendix table 24.** Statement "Moderate use of alcohol is part of everyday life." in 2005, by age and sex (%). Adolescent Health and Lifestyle Survey.

	BOYS				GIRLS			
	12	14	16	18	12	14	16	18
Definitely agree	30	29	39	45	23	25	30	32
Agree to some extent	25	30	34	34	26	36	36	41
Difficult to say	19	19	13	12	20	17	13	12
Slightly disagree	9	11	8	5	14	12	12	10
Definitely disagree	18	11	6	5	16	10	8	5
Total	100	100	100	100	100	100	100	100
N	387	1077	794	674	413	1180	980	934
Missing data, N	8	15	12	7	5	9	5	3

**Appendix table 25.** Percentage of adolescents reporting abstinence in 1977-2005, by age and sex. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
<b>BOYS</b>															
12	82	76	80	82	89	81	85	79	79	77	81	76	80	86	89
14	47	53	53	51	57	50	47	42	41	43	39	36	42	50	58
16	25	25	21	23	24	19	17	14	15	12	15	14	18	21	22
18	8	10	9	11	11	9	5	7	7	7	7	9	8	9	8
<b>GIRLS</b>															
12	80	85	85	91	91	87	90	84	82	79	79	80	81	90	91
14	44	50	50	51	59	45	44	38	36	31	29	30	34	39	46
16	24	19	22	21	22	15	14	12	13	11	11	12	13	13	21
18	9	13	13	11	12	8	7	7	6	6	7	7	7	6	8

**Appendix table 26.** Percentage of adolescents who have tried alcohol in 2001-2005, by age and sex. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
<b>BOYS</b>															
12	.	.	.	.	.	.	.	.	.	.	.	.	26	18	12
14	.	.	.	.	.	.	.	.	.	.	.	.	66	56	47
16	.	.	.	.	.	.	.	.	.	.	.	.	88	83	82
18	.	.	.	.	.	.	.	.	.	.	.	.	94	93	94
<b>GIRLS</b>															
12	.	.	.	.	.	.	.	.	.	.	.	.	25	14	10
14	.	.	.	.	.	.	.	.	.	.	.	.	69	64	58
16	.	.	.	.	.	.	.	.	.	.	.	.	91	89	84
18	.	.	.	.	.	.	.	.	.	.	.	.	95	96	95

**Appendix table 27.** Percentage of adolescents who have drunk alcohol at least once in 1977-2005, by age and sex. Adolescent Health and Lifestyle Survey.

	Year												*		
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
<b>BOYS</b>															
12	22	28	23	16	12	19	15	22	18	.	21	19	26	18	12
14	58	55	47	52	50	49	58	56	58	.	63	59	66	56	47
16	77	78	80	79	79	81	82	86	86	.	86	84	88	83	82
18	94	91	92	89	90	91	94	93	93	.	94	91	94	93	94
<b>GIRLS</b>															
12	20	13	13	8	7	8	8	12	13	.	14	9	25	14	10
14	49	43	44	44	37	45	45	54	56	.	61	55	69	64	58
16	72	71	70	68	68	76	77	80	81	.	82	75	91	89	84
18	84	81	80	81	77	85	87	89	88	.	86	82	95	96	95

\*Note. Questions in 1977-1999 differed somewhat from those in 2001-2005.

**Appendix table 28.** Percentage of adolescents using alcohol at least once a month in 1977-2005, by age and sex. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
<b>BOYS</b>															
12	3	6	4	1	2	5	3	3	3	6	6	6	5	1	2
14	18	17	15	15	16	19	22	23	26	25	28	30	27	18	15
16	43	41	43	38	41	51	55	56	54	58	55	59	55	48	51
18	71	66	67	66	69	72	75	79	74	76	77	75	78	74	78
<b>GIRLS</b>															
12	4	3	1	2	2	3	2	3	4	5	5	4	5	2	2
14	24	15	15	15	17	19	22	28	29	36	39	37	36	27	22
16	41	38	38	32	40	44	45	48	50	56	57	56	55	53	49
18	60	54	51	58	62	66	68	73	69	72	74	75	74	78	79

**Appendix table 29.** Percentage of adolescents using alcohol at least once a week in 1977-2005, by age and sex. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
<b>BOYS</b>															
12	2	1	0	1	1	2	1	1	1	2	1	2	2	0	-
14	4	5	4	3	2	5	6	6	7	6	8	9	8	5	4
16	16	13	15	12	11	15	20	18	18	22	21	23	21	16	19
18	32	25	28	21	29	31	38	43	37	39	40	40	41	41	44
<b>GIRLS</b>															
12	2	1	-	0	1	-	0	1	1	1	1	0	1	-	1
14	7	3	3	3	3	4	5	6	6	7	9	11	9	7	6
16	10	8	7	7	9	12	12	12	12	15	17	17	18	17	15
18	23	22	17	15	18	24	24	26	25	26	29	31	31	36	35

**Appendix table 30.** Percentage of adolescents drinking alcohol until really drunk at least once a month in 1981-2005, by age and sex. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
<b>BOYS</b>															
12	.	.	0	0	-	1	-	0	0	1	-	0	-	0	0
14	.	.	3	4	3	6	8	7	11	7	10	11	8	4	4
16	.	.	14	13	13	24	26	24	28	22	28	30	27	22	22
18	.	.	22	18	23	34	34	39	41	32	43	41	39	40	41
<b>GIRLS</b>															
12	.	.	-	0	1	-	0	0	0	0	1	-	0	-	-
14	.	.	4	5	4	6	8	11	11	11	16	16	13	9	7
16	.	.	7	8	12	17	19	17	20	16	24	22	21	23	18
18	.	.	7	8	9	18	18	18	24	16	28	28	27	33	32



**Appendix table 31.** Percentage of adolescents using alcohol to be really drunk at least once a week in 1981-2005, by age and sex. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
<b>BOYS</b>															
12	.	.	0	-	-	-	-	0	0	-	-	0	-	-	-
14	.	.	0	0	0	1	2	1	2	1	2	2	1	1	0
16	.	.	2	2	3	3	4	5	5	3	6	6	6	3	5
18	.	.	5	3	5	7	10	10	10	8	12	10	9	7	12
<b>GIRLS</b>															
12	.	.	-	-	-	-	-	-	-	0	-	-	-	-	-
14	.	.	1	0	1	1	0	2	1	1	2	2	2	1	1
16	.	.	1	1	1	1	3	2	2	2	4	3	4	4	4
18	.	.	1	1	2	3	3	2	4	3	5	5	5	8	7

**Appendix table 32.** Statement "Moderate use of alcohol is part of everyday life." Percentage of adolescents agreeing with the statement definitely and to some extent in 1979-2005, by age and sex. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
<b>BOYS</b>															
12	.	19	.	.	25	22	.	30	28	35	29	33	.	.	55
14	.	31	.	.	43	40	.	49	55	55	51	57	.	.	59
16	.	53	.	.	59	63	.	72	73	76	70	74	.	.	73
18	.	67	.	.	71	72	.	80	80	80	79	75	.	.	78
<b>GIRLS</b>															
12	.	18	.	.	23	22	.	33	27	36	30	33	.	.	49
14	.	40	.	.	43	40	.	55	55	61	54	59	.	.	61
16	.	46	.	.	59	54	.	64	70	74	67	69	.	.	65
18	.	48	.	.	57	59	.	70	72	76	71	73	.	.	73

**Appendix table 33.** Percentage of adolescents knowing acquaintances who tried drugs during last year in 2005, by age and sex. Adolescent Health and Lifestyle Survey.

	BOYS				GIRLS			
	12	14	16	18	12	14	16	18
I don't know of any adolescent	95	84	67	57	96	71	53	50
I know one adolescent	3	7	9	9	3	13	15	13
I know 2-5 adolescents	2	7	17	22	1	13	23	25
I know more than 5 adolescents	1	2	7	13	0	3	9	13
Total	100	100	100	100	100	100	100	100
N	393	1082	803	674	417	1175	984	937
Missing data, N	2	10	3	7	1	14	7	0

**Appendix table 34.** Percentage of adolescents who were offered drugs in Finland during last year by person who offered in 2005, by age and sex. Adolescent Health and Lifestyle Survey.

	BOYS				GIRLS			
	12	14	16	18	12	14	16	18
No	99	96	88	79	99	94	87	84
Yes	1	4	13	21	1	6	13	16
<i>Contains:</i>								
Both acquaintances and strangers offered	0	-	2	3	-	1	2	2
Only acquaintances offered	0	2	7	13	0	3	9	11
Only strangers offered	1	1	4	5	1	2	3	2
Information missing on offerer	-	0	0	-	-	-	0	-
Total	100	100	100	100	100	100	100	100
N	391	1089	800	675	416	1181	981	935
Missing data, N	4	3	6	6	2	8	4	2

**Appendix table 35.** Percentage of adolescents knowing at least one acquaintance who tried drugs during last year in 1981-2005, by age and sex. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
<b>BOYS</b>															
12	.	.	9	.	6	6	.	11	5	7	8	7	9	6	5
14	.	.	12	.	14	12	.	22	20	23	23	27	29	19	16
16	.	.	13	.	20	20	.	30	34	40	43	45	49	40	33
18	.	.	14	.	24	21	.	31	41	44	49	50	56	49	43
<b>GIRLS</b>															
12	.	.	6	.	8	3	.	8	7	7	6	6	13	5	4
14	.	.	16	.	23	21	.	34	31	39	42	44	48	37	29
16	.	.	18	.	29	29	.	40	45	54	56	60	66	58	47
18	.	.	14	.	25	21	.	32	42	47	54	57	65	61	50

**Appendix table 36.** Percentage of adolescents knowing more than five acquaintances who tried drugs during last year in 1981-2005, by age and sex. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
<b>BOYS</b>															
12	.	.	0	.	0	0	.	-	0	1	0	0	1	1	1
14	.	.	2	.	3	2	.	2	3	3	3	4	5	3	2
16	.	.	2	.	3	3	.	4	7	9	10	13	13	8	7
18	.	.	2	.	6	3	.	7	11	13	16	17	20	14	13
<b>GIRLS</b>															
12	.	.	0	.	0	-	.	4	1	0	0	1	0	-	0
14	.	.	2	.	3	2	.	4	4	6	6	8	9	5	3
16	.	.	2	.	4	4	.	5	8	12	12	15	19	14	9
18	.	.	2	.	3	3	.	4	8	12	13	15	23	18	13

**Appendix table 37.** Percentage of adolescents who were offered drugs in Finland during last year in 1991-2005, by age and sex. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
<b>BOYS</b>															
12	.	.	.	.	.	.	.	2	1	1	1	1	1	0	1
14	.	.	.	.	.	.	.	5	5	4	6	5	8	4	4
16	.	.	.	.	.	.	.	14	12	16	16	18	17	13	13
18	.	.	.	.	.	.	.	18	20	23	25	24	24	21	21
<b>GIRLS</b>															
12	.	.	.	.	.	.	.	6	0	0	1	0	1	1	1
14	.	.	.	.	.	.	.	6	5	7	7	9	12	8	6
16	.	.	.	.	.	.	.	11	12	16	16	17	20	16	13
18	.	.	.	.	.	.	.	10	12	15	18	17	22	20	16

**Appendix table 38.** Percentage of adolescents who were offered drugs by friends or acquaintances during last year in 1991-2005, by age and sex. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
<b>BOYS</b>															
12	.	.	.	.	.	.	.	-	1	0	-	1	1	-	1
14	.	.	.	.	.	.	.	2	2	2	3	3	4	2	2
16	.	.	.	.	.	.	.	5	6	8	9	11	11	8	9
18	.	.	.	.	.	.	.	8	9	13	15	18	18	15	16
<b>GIRLS</b>															
12	.	.	.	.	.	.	.	1	0	0	0	-	-	1	0
14	.	.	.	.	.	.	.	2	3	4	3	7	8	5	4
16	.	.	.	.	.	.	.	6	5	9	10	13	16	12	10
18	.	.	.	.	.	.	.	5	7	9	12	13	18	16	14

**Appendix table 39.** Percentage of adolescents who were offered drugs by strangers during last year in 1991-2005, by age and sex. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
<b>BOYS</b>															
12	.	.	.	.	.	.	.	-	-	0	1	-	1	0	1
14	.	.	.	.	.	.	.	3	3	2	4	3	4	2	1
16	.	.	.	.	.	.	.	9	8	10	9	9	7	6	6
18	.	.	.	.	.	.	.	11	13	13	13	10	9	8	7
<b>GIRLS</b>															
12	.	.	.	.	.	.	.	0	-	0	0	0	1	1	1
14	.	.	.	.	.	.	.	4	3	4	5	3	5	4	3
16	.	.	.	.	.	.	.	6	7	9	9	6	7	7	4
18	.	.	.	.	.	.	.	6	7	8	8	6	8	8	4

**Appendix table 40.** Percentage of 12-18-year-olds who have never tried tobacco in 1977-2005, age- and sex-adjusted. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
BOYS	29	29	29	31	34	36	34	31	36	35	36	37	40	47	49
GIRLS	38	39	39	39	40	41	42	38	40	38	38	38	40	45	50
ALL	34	34	34	35	37	38	38	35	38	36	37	37	40	46	50

**Appendix table 41.** Percentage of 14-18-year-olds using tobacco products daily in 1977-2005, age- and sex-adjusted. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
BOYS	.	.	28	27	.	29	31	28	27	27	26	26	27	23	22
GIRLS	.	.	22	21	.	24	24	23	21	22	24	26	26	25	23
ALL	.	.	25	24	.	26	28	26	24	25	25	26	26	24	23

**Appendix table 42.** Percentage of 14-18-year-olds smoking cigarettes daily in 1977-2005, age- and sex-adjusted. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
BOYS	27	23	27	25	24	28	30	27	26	26	24	25	25	22	22
GIRLS	25	20	21	20	20	23	24	23	21	22	24	25	26	25	23
ALL	26	21	24	23	22	26	27	25	24	24	24	25	25	23	22

**Appendix table 43.** Percentage of 14-18-year-olds smoking over nine cigarettes daily in 1977-2005, age- and sex-adjusted. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
BOYS	16	13	16	16	16	19	21	19	17	16	15	16	16	14	14
GIRLS	9	8	7	9	11	12	11	13	10	11	10	12	13	13	10
ALL	12	11	12	13	13	15	16	16	14	14	13	14	15	13	12

**Appendix table 44.** Percentage of 14-18-year-olds smoking self-rolled cigarettes among daily smokers in 1977-2005, age- and sex-adjusted. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
BOYS	27	30	17	22	21	16	12	16	25	30	42	43	40	39	33
GIRLS	19	13	11	10	11	8	4	8	12	21	28	30	31	31	26
ALL	23	22	14	16	16	12	8	12	18	26	35	37	35	35	29

**Appendix table 45.** Average daily consumption of cigarettes (total number of manufactured and self-rolled cigarettes, pipefuls and cigars) in 12-18-year-olds in 1977-2005, age- and sex-adjusted. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
BOYS	10.2	10.4	10.0	10.9	11.9	11.5	12.0	12.1	11.2	11.0	11.5	11.6	11.5	12.1	11.3
GIRLS	7.3	8.2	7.3	8.5	9.6	8.8	9.0	10.1	9.2	8.9	8.7	9.5	9.4	9.6	8.9
ALL	8.8	9.3	8.7	9.7	10.8	10.1	10.5	11.1	10.2	9.9	10.1	10.5	10.4	10.8	10.1

**Appendix table 46.** Percentage of 12-18-year-olds who have experimented with snuff in 1981-2005, age- and sex-adjusted. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
BOYS	.	.	15	18	.	20	21	19	20	21	23	25	25	21	20
GIRLS	.	.	4	5	.	6	6	5	4	5	8	9	10	11	7
ALL	.	.	10	12	.	13	14	12	12	13	15	17	18	16	13

**Appendix table 47.** Percentage of 14-18-year-olds using snuff occasionally or daily in 1981-2005, age- and sex-adjusted. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
BOYS	.	.	3.0	3.6	.	4.0	6.0	4.4	4.7	5.7	7.1	9.4	9.1	5.6	6.7
GIRLS	.	.	0.3	0.2	.	0.5	0.4	0.4	0.3	0.4	0.8	0.8	0.8	0.7	0.8
ALL	.	.	1.7	1.9	.	2.3	3.2	2.4	2.5	3.0	4.0	5.1	4.9	3.1	3.8

**Appendix table 48.** Percentage of 12-18-year-olds exposed daily to tobacco smoke for at least one hour in 1991-2005, age- and sex-adjusted. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
BOYS	.	.	.	.	.	.	.	20	16	14	11	.	10	9	8
GIRLS	.	.	.	.	.	.	.	18	15	13	13	.	10	11	9
ALL	.	.	.	.	.	.	.	19	15	13	12	.	10	10	8

**Appendix table 49.** Percentage of 12-18-year-olds exposed daily to tobacco smoke more than five hours in 1991-2005, age- and sex-adjusted. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
BOYS	.	.	.	.	.	.	.	6	5	4	3	.	2	2	2
GIRLS	.	.	.	.	.	.	.	7	5	5	4	.	2	2	2
ALL	.	.	.	.	.	.	.	7	5	4	3	.	2	2	2

**Appendix table 50.** Percentage of 14-18-year-olds reporting abstinence in 1977-2005, age- and sex-adjusted. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
BOYS	27	29	28	28	30	26	23	21	21	21	20	19	23	27	29
GIRLS	25	27	28	28	31	22	22	19	18	16	15	16	18	19	25
ALL	26	28	28	28	31	24	22	20	20	18	18	18	20	23	27

**Appendix table 51.** Percentage of 14-18-year-olds using alcohol at least once a month in 1977-2005, age- and sex-adjusted. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
BOYS	44	41	42	40	42	47	50	53	52	53	53	55	53	47	48
GIRLS	42	36	35	35	39	43	45	50	50	55	57	56	55	53	50
ALL	43	39	38	37	41	45	48	51	51	54	55	55	54	50	49

**Appendix table 52.** Percentage of 14-18-year-olds using alcohol at least once a week in 1977-2005, age- and sex-adjusted. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
BOYS	17	14	16	12	14	17	21	22	21	22	23	24	23	21	23
GIRLS	13	11	9	9	10	13	14	15	14	16	18	20	19	20	19
ALL	15	13	12	10	12	15	17	19	18	19	21	22	21	20	21

**Appendix table 53.** Percentage of 14-18-year-olds drinking alcohol until really drunk at least once a month in 1981-2005, age- and sex-adjusted. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
BOYS	.	.	13	12	13	21	23	24	26	20	27	27	25	22	22
GIRLS	.	.	6	7	8	14	15	15	18	14	23	22	20	22	19
ALL	.	.	10	9	11	18	19	19	22	17	25	25	22	22	20

**Appendix table 54.** Percentage of 14-18-year-olds drinking alcohol until really drunk at least once a week in 1981-2005, age- and sex-adjusted. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
BOYS	.	.	2.6	1.8	2.7	3.5	5.1	5.6	5.6	4.1	6.5	6.1	5.4	3.6	5.8
GIRLS	.	.	0.8	0.7	1.2	1.7	2.1	2.0	2.4	2.1	3.9	3.5	3.5	4.2	4.0
ALL	.	.	1.7	1.3	2.0	2.6	3.6	3.8	4.0	3.1	5.2	4.8	4.4	3.9	4.9

**Appendix table 55.** Percentage of 14-18-year-olds knowing at least one acquaintance who tried drugs during last year in 1981-2005, age- and sex-adjusted. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
BOYS	.	.	13	.	20	18	.	28	32	36	38	41	44	36	31
GIRLS	.	.	16	.	26	24	.	35	39	46	51	54	60	52	42
ALL	.	.	14	.	23	21	.	31	36	41	44	47	52	44	37

**Appendix table 56.** Percentage of 14-18-year-olds knowing more than five acquaintances who tried drugs during last year in 1981-2005, age- and sex-adjusted. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
BOYS	.	.	2	.	4	3	.	4	7	8	9	11	13	8	7
GIRLS	.	.	2	.	4	3	.	5	7	10	10	13	17	12	8
ALL	.	.	2	.	4	3	.	4	7	9	10	12	15	10	8

**Appendix table 57.** Percentage of 14-18-year-olds who were offered drugs in Finland during last year in 1991-2005, age- and sex-adjusted. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
BOYS	.	.	.	.	.	.	.	12	13	15	15	16	16	13	12
GIRLS	.	.	.	.	.	.	.	9	10	13	14	15	18	15	12
ALL	.	.	.	.	.	.	.	11	11	14	15	15	17	14	12

**Appendix table 58.** Percentage of 14-18-year-olds who were offered drugs by friends or acquaintances during last year in 1991-2005, age- and sex-adjusted. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
BOYS	.	.	.	.	.	.	.	5	5	8	9	11	11	9	9
GIRLS	.	.	.	.	.	.	.	4	5	7	8	11	14	11	9
ALL	.	.	.	.	.	.	.	5	5	7	9	11	13	10	9

**Appendix table 59.** Percentage of 14-18-year-olds who were offered drugs by strangers during last year in 1991-2005, age- and sex-adjusted. Adolescent Health and Lifestyle Survey.

	Year														
	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
BOYS	.	.	.	.	.	.	.	8	8	9	9	7	7	5	5
GIRLS	.	.	.	.	.	.	.	5	6	7	7	5	7	6	4
ALL	.	.	.	.	.	.	.	7	7	8	8	6	7	6	4

**Appendix table 60.** Statistical significance of difference in various indicators between 2003 and 2005, by age and sex. P-values of  $\chi^2$ -test. Adolescent Health and Lifestyle Survey.

Indicator	BOYS				GIRLS			
	12	14	16	18	12	14	16	18
Tried tobacco	.715	.015	.970	.074	.761	.003	.000	.053
Tobacco products daily	.946	.746	.811	.734	.333	.372	.165	.220
Tried snuff	.770	.653	.051	.455	.093	.834	.060	.245
Current snuff user	.301	.234	.739	.072	.	.924	.282	.946
Non-drinker	.195	.000	.477	.476	.631	.000	.000	.084
Alcohol weekly	.305	.282	.040	.282	.168	.279	.370	.827
Alcohol monthly	.827	.076	.212	.134	.928	.003	.050	.706
Really drunk weekly	.000	.000	.004	.001	.000	.000	.000	.176
Really drunk monthly	.975	.640	.983	.856	.	.033	.003	.775
One acquaintance who tried drugs	.669	.022	.004	.045	.788	.000	.000	.000
Five acquaintances who tried drugs	.721	.075	.716	.375	.338	.017	.000	.003
Drugs were offered	.120	.356	.702	.839	.651	.098	.054	.011
Drugs were offered by friends	.173	.961	.954	.935	.278	.090	.260	.146
Drugs were offered by strangers	.208	.101	.972	.669	.919	.271	.013	.003

**Appendix table 61.** Statistical significance of difference in various indicators between 2001 and 2005, by age and sex. P-values of  $\chi^2$ -test. Adolescent Health and Lifestyle Survey.

Indicator	BOYS				GIRLS			
	12	14	16	18	12	14	16	18
Tried tobacco	.000	.000	.007	.019	.000	.000	.000	.077
Tobacco products daily	.537	.000	.001	.938	.528	.000	.055	.637
Tried snuff	.827	.000	.000	.448	.326	.002	.000	.049
Current snuff user	.	.026	.000	.899	.	.548	.918	.761
Non-drinker	.001	.000	.052	.826	.000	.000	.000	.503
Alcohol weekly	.005	.000	.326	.146	.259	.002	.147	.034
Alcohol monthly	.017	.000	.057	.912	.014	.000	.006	.027
Really drunk weekly	.000	.000	.062	.035	.000	.000	.000	.051
Really drunk monthly	.338	.000	.018	.560	.322	.000	.088	.011
One acquaintance who tried drugs	.019	.000	.000	.000	.000	.000	.000	.000
Five acquaintances who tried drugs	.787	.000	.000	.000	.988	.000	.000	.000
Drugs were offered	.904	.000	.009	.097	.978	.000	.000	.001
Drugs were offered by friends	.878	.001	.058	.137	.323	.000	.000	.009
Drugs were offered by strangers	.859	.000	.158	.280	.681	.002	.007	.000



**APPENDIX 1. Table of samples**

Samples used in the Adolescent Health and Lifestyle Survey in 1977-2005, by date of birth, survey year and age at survey.

Birth year	Birth date	Survey year														
		1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
		Survey age														
1958	20-23.7	18														
1960	20-23.7	16	18													
	24-25.7		18													
1962	20-23.7	14	16													
	24-25.7		16													
	26-31.7			18												
1964	20-23.7	12	14		18											
	24-25.7		14		18											
	26-31.7			16												
1966	14-19.7					18										
	20-25.7		12	14												
	26-31.7				16											
1968	14-19.7						18									
	20-25.7			12	14	16	18									
	26-31.7					16	18									
1970	28-30.6							18								
	14-19.7						16									
	20-25.7				12	14	16									
	26-31.7						16									
	1-3.8							18								
1972	19-27.6								18							
	28-30.6							16								
	14-19.7						14									
	20-25.7					12	14									
	26-31.7						14									
	1-3.8							16								
	20-28.8								18							
1974	29.5-3.6									18						
	5-10.7								16							
	11-13.7									18						
	14-19.7								16							
	20-25.7							12								
	26-31.7							14								
	1-3.8									18						
	4-9.8								16							
	15-20.9									18						
1976	29.5-3.6									16						
	26.6-1.7										18					
	5-10.7								14							
	11-13.7										18					
	14-19.7									16						
	20-25.7							12								
	26-31.7							14								
	1-3.8										18					
	4-9.8								14							
	18-23.8										18					
	15-20.9									16						
1978	30.5-4.6											18				
	5-10.6										16					
	3-8.7									14						
	9-13.7											18				
	14-19.7										16					
	20-25.7							12								
	26-31.7									14						
	1-5.8											18				
	6-11.8									14						
	3-8.9										16					
	9-12.9											18				

cont.

Birth year	Birth date	Survey year														
		1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2005
		Survey age														
1980	23-25.6												18			
	26-29.6												18			
	30.6-2.7											16				
	3-8.7										14					
	9.7												18			
	10-19.7											16				
	20-25.7									12						
	26-31.7										14					
	1-5.8												18			
	6-11.8										14					
	12-16.8											16				
	17-18.8												18			
	19-22.8												18			
1982	22-24.6												16			
	25-26.6												16			
	27.6-2.7													18		
	3-8.7											14				
	9-13.7												16			
	14-19.7											14				
	20-25.7									12						
	26-31.7										14					
	4-7.8													18		
	9-13.8												16			
	14-16.8												16			
	17-21.8													18		
1984	28-30.6														18	
	1-2.7														18	
	3-5.7												14			
	6-8.7												14			
	9.7														18	
	10-18.7													16		
	19.7														18	
	20-25.7											12				
	26-31.7												14			
	1-5.8													16		
	6-8.8												14			
	9-11.8												14			
	12-13.8													16		
	14-18.8														18	
1986	23-24.6													14		
	25-30.6															18
	1-2.7															18
	3-8.7													14		
	8-19.7														16	
	20-25.7											12				
	26-31.7													14		
	1-5.8														16	
	6-11.8													14		
	12-14.8														16	
	15-20.8															18
	21-22.8													14		
	23-24.8															18
1988	1-8.7															16
	10-19.7														14	
	20-25.7												12			
	26-31.7														14	
	1-3.8														14	
	6-13.8															16
1990	11-19.7															14
	20-25.7														12	
	26-31.7															14
	1-3.8															14
1992	20-25.7															12

## **APPENDIX 2.**

### **Impact of the declining response rate on results**

The impact of declining response rate on the results was estimated by two methods with the aim to determine the difference between the "true prevalence" in the population and the observed prevalence in the survey.

**Estimate 1.** To determine the repeatability of the questions, random subsamples were drawn from the 1995 and 1997 samples. To those who responded the actual survey (initial questionnaire), a second, identical questionnaire (repeat questionnaire) with an information letter was mailed approximately four weeks from receipt of their response to the initial questionnaire. In the 1995 survey, a repeat questionnaire was sent to 1022 of the 16- and 18-year-old respondents, of them 72% (N=733) responded. In 1997, a repeat questionnaire was sent to 305 of the 14-year-olds who had answered the first questionnaire, and of them 71% responded (N=216). To estimate the impact of non-response, we compared the group responding to the initial questionnaire only (non-respondent to the repeat questionnaire) to the group who answered both questionnaires. We assumed that the non-respondents to the initial questionnaire resemble the non-respondents of the repeat questionnaire. To estimate the "true" prevalence rate of each indicator in the initial inquiry, the ratio of the prevalence rates of those answering both questionnaires and of those answering the initial questionnaire only was calculated. The coefficient, acquired through this method, for each indicator was used for each survey.

**Estimate 2.** All the respondents of the 2005 data were divided into three groups according to the response time: 1) those who responded to the initial questionnaire sent in early February; 2) those who responded to the questionnaire sent with the reminder 1; and 3) those who responded to the questionnaire sent with the reminder 2. Of the fourth group, the non-respondents, we had no data. Concerning each indicator, we hypothesized that the difference between the non-respondents and the third group, by magnitude and direction, was identical to the average difference between groups 1 and 2 and groups 2 and 3. On this basis, a coefficient was calculated to determine the "true" prevalence rate of each indicator.

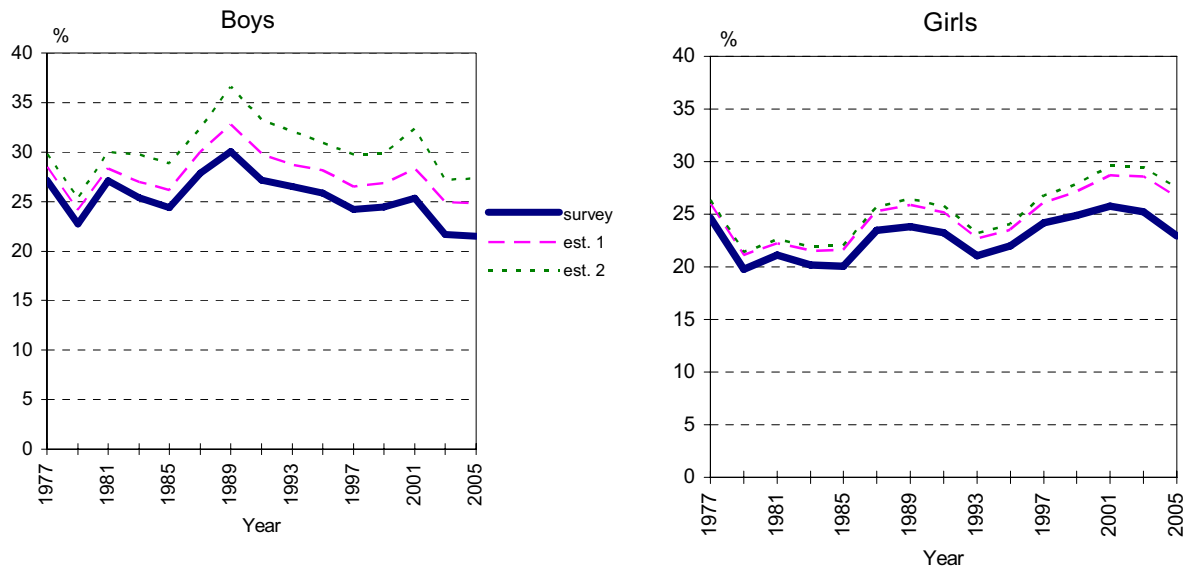
Concerning all indicators, the ratio of non-respondents to respondents was assumed to remain the same over the entire study period. The change in the response rate by age group is, therefore, the factor contributing to the variance in time between the estimated and observed proportions. Finally, the age- and sex-adjusted proportions of the "true" prevalence rates, as calculated for the various indicators using both alternatives, were compared to the observed results of the surveys.

Both estimates indicated that the non-respondents smoke and use snuff and alcohol slightly more than the respondents. Along with the falling response rate over the past 28 years, the difference between the "true" prevalence rate and the observed prevalence rate grows with time. This is seen in figures 1, 2 and 3 in that the curves illustrating the "true" behaviour (Estimates 1 and 2) are on a higher level than those illustrating the survey. The difference increases parallel to the decrease in the response rate.

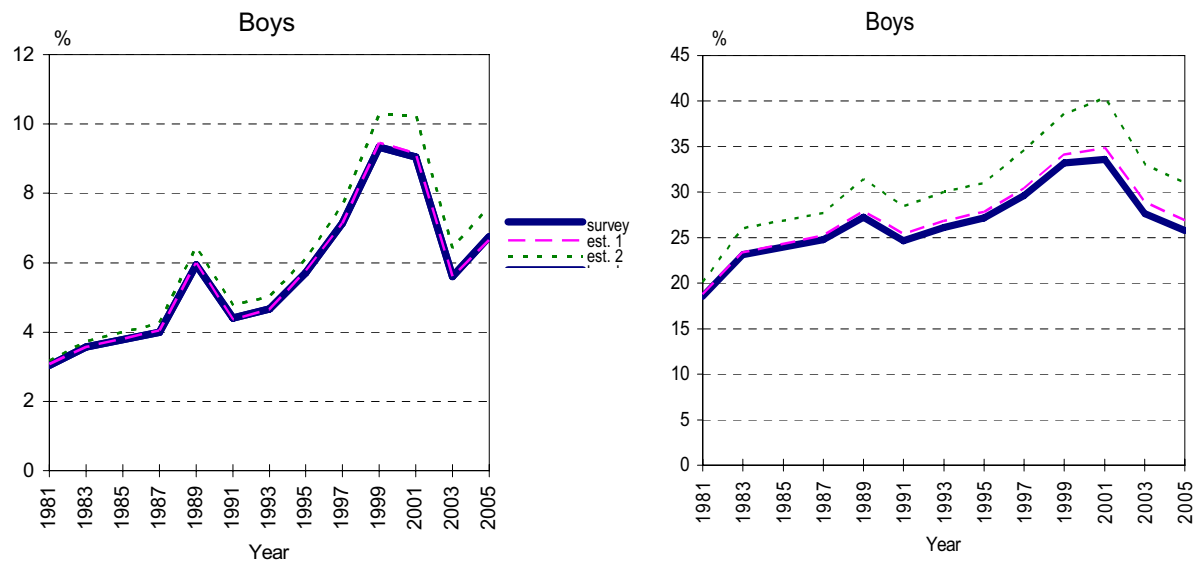
Concerning the proportions of non-drinkers, the fall in response rate seems to have only a negligible effect on girls, the non-respondents deviating only slightly from the respondents (Figure 4). In boys, the proportion of non-drinkers may be somewhat overrated. The social exposure to drugs indicator shows a smaller difference than found for tobacco and alcohol. The small difference was as expected, estimating that non-respondents include more persons who know drug-using acquaintances. The supply of drugs indicator, in turn, is giving a conflicting estimate among boys. The estimate 1 implies that the number of those who were offered drugs is slightly lower among the non-respondents than the respondents. In contrast, the estimate 2 indicates that both boys and girls encounter drug offers clearly more often among the non-respondents than among the respondents.

Nonetheless, it is important to notice that the direction of the trends is parallel in all of these cases, although with time the declining response rate will influence the prevalence rates in the survey. Further, regarding the year 2005, the declining response rate does not seem to explain the difference between years 2003 and 2005.

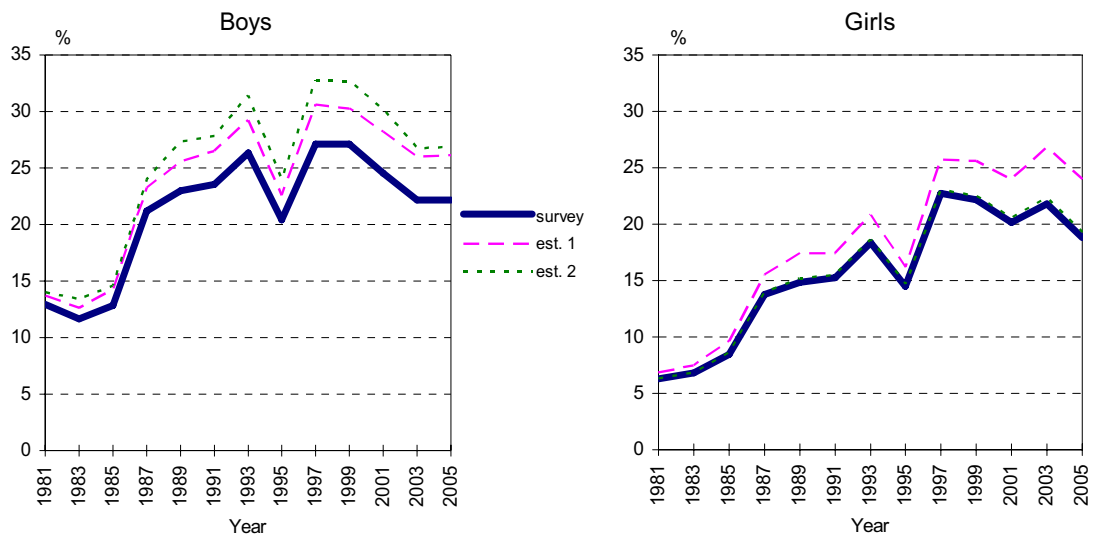
In Table 1, we compare the prevalence of the various indicators in 2003 and 2005 according to both estimates, 1 and 2. The proportion of "true" daily smokers in 2003-2005 might be several per cents higher than obtained in the survey, and so might the proportions of those who drink until really drunk at least once a month. In girls, the differences are smaller than in boys, because their response rate is better and shows less decline. Differences in the other indicators are less distinct.



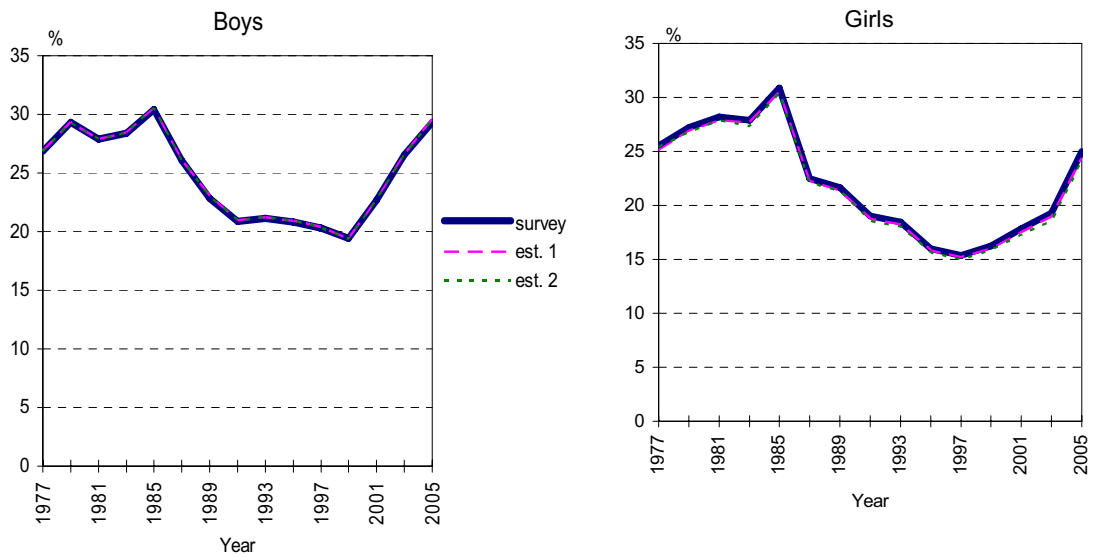
**Figure 1.** Age-adjusted percentage of 14-18-year-old daily smoking boys and girls in 1977-2005, based on the survey data (respondents) and on two estimates on the behaviour of non-respondents.



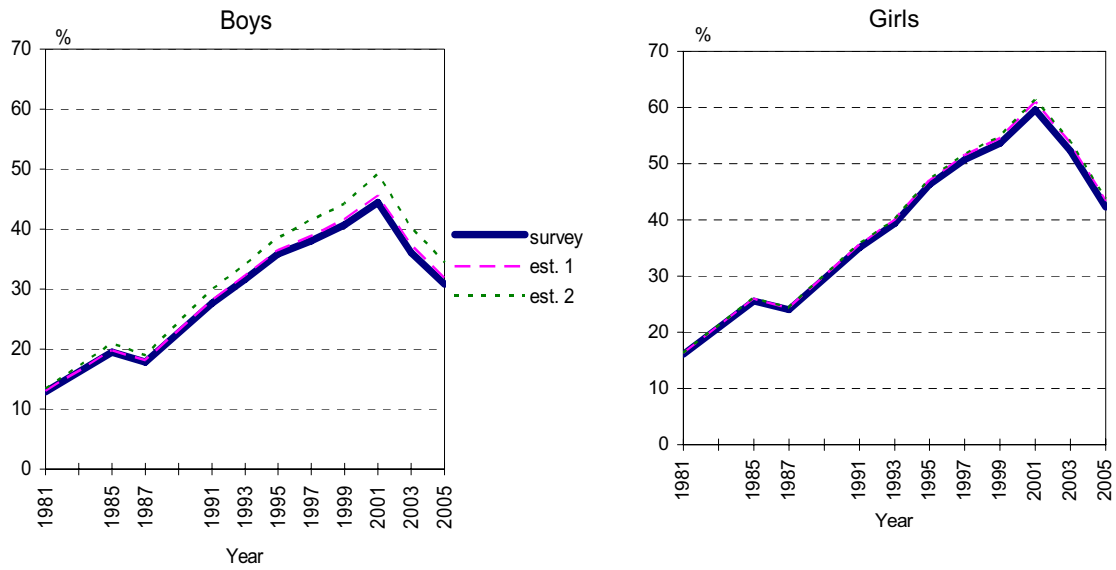
**Figure 2.** Age-adjusted percentage of 14-18-year-old boys who currently use snuff and who have tried snuff in 1981-2005, based on the survey data (respondents) and on two estimates on the behaviour of non-respondents.



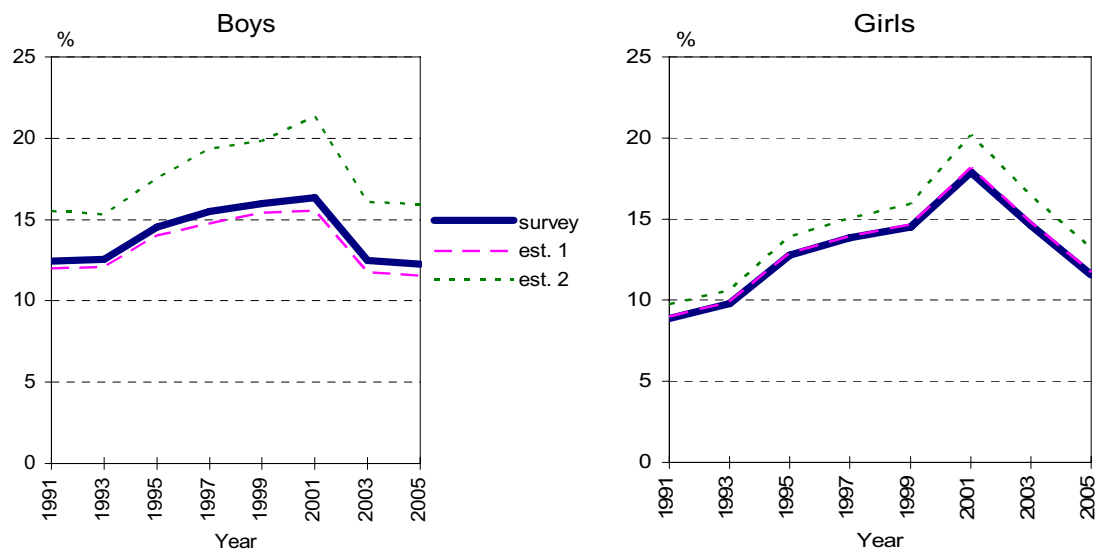
**Figure 3.** Age-adjusted percentage of 14-18-year-old boys and girls who drink until really drunk at least once a month in 1981-2005, based on the survey data (respondents) and on two estimates on the behaviour of non-respondents.



**Figure 4.** Age-adjusted percentage of 14-18-year-old boys and girls who abstain from alcohol in 1981-2005, based on the survey data (respondents) and on two estimates on the behaviour of non-respondents.



**Figure 5.** Age-adjusted percentage of 14-18-year-old boys and girls who know acquaintances having tried drugs in 1981-2005, based on the survey data (respondents) and on two estimates on the behaviour of non-respondents.



**Figure 6.** Age-adjusted percentage of 14-18-year-old boys and girls who were offered drugs in 1981-2005, based on the survey data (respondents) and on two estimates on the behaviour of non-respondents.

Table 1 shows a bias in the indicators of 2003 and 2005. Despite the bias, the change in the prevalence rates of the indicators between the 2003 to 2005 surveys remains nearly the same when, instead of the observed prevalence



































