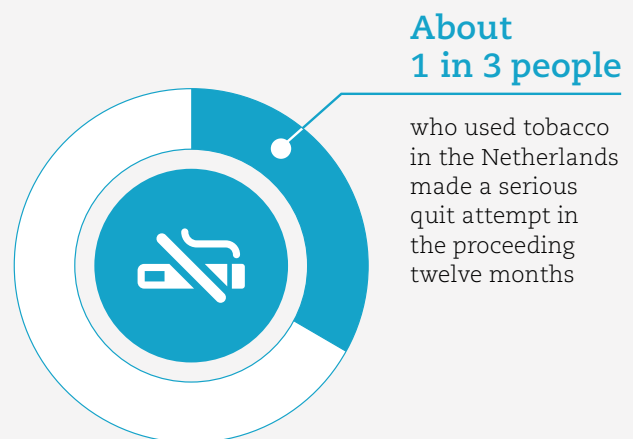
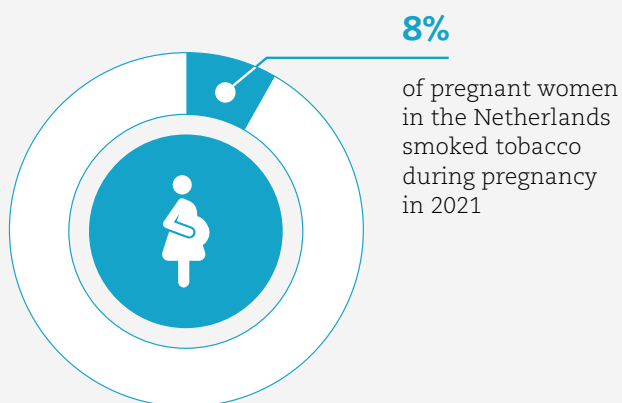
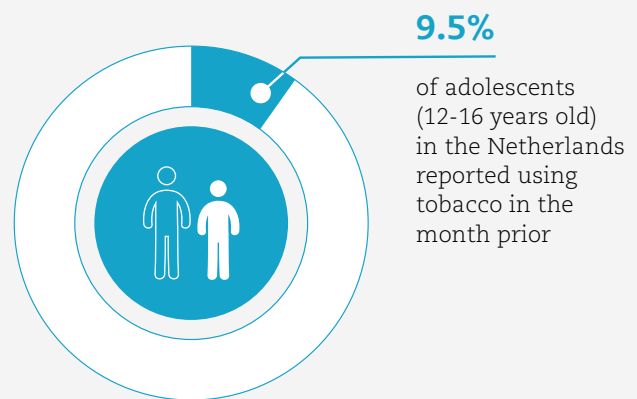
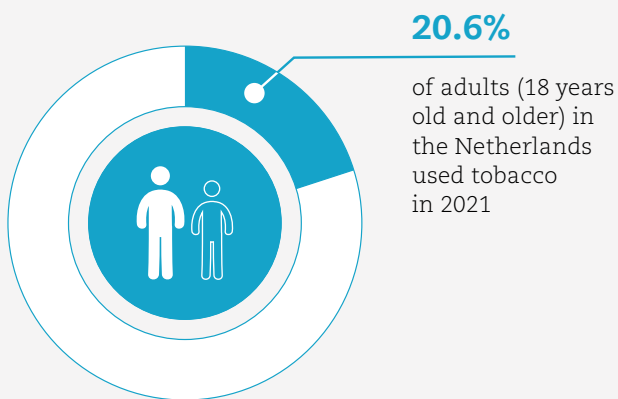


MARCH 2023

COLLECTING DATA ON TOBACCO USE IN THE NETHERLANDS

MONITORING TOBACCO USE AMONG ADULTS, ADOLESCENTS,
AND PREGNANT WOMEN

SMOKING IN THE NETHERLANDS



NETHERLANDS EXPERTISE CENTRE FOR TOBACCO CONTROL

The Netherlands Expertise Centre for Tobacco Control (NET) was established in 2013 as part of the Trimbos Institute, an independent non-profit public health institute. Its mission is to contribute to smoke-free societies by developing and applying knowledge about tobacco use, health risks related to tobacco use and tobacco exposure, and evidence-based tobacco control interventions in the Netherlands and internationally. NET works to transfer knowledge from research findings into practice and policy recommendations.



SMOKING IN THE NETHERLANDS

This bulletin presents key statistics on smoking among adults, adolescents, and pregnant women in the Netherlands. These statistics are vital to monitoring the goals set in the National Prevention Agreement.

THE NATIONAL PREVENTION AGREEMENT

The National Prevention Agreement is a signed accord between the Netherlands' national government, civil-society organizations, health funds, the health care sector, health insurers, municipalities, sports associations, and businesses. These organizations have agreed on a package of measures and actions designed to ensure a smoke-free generation by 2040. The agreement was formalized in 2019.

The National Prevention Agreement has established three goals related to smoking in the Netherlands:

- By 2040, fewer than 5% of adults in the Netherlands will smoke tobacco
- By 2040, 0% of adolescents in the Netherlands will smoke tobacco
- By 2040, 0% of pregnant women in the Netherlands will smoke tobacco

In addition to the 2040 goals, the agreement also set a number of interim objectives for 2020. A selection of those include objectives related to smoking rates and smoking cessation attempts:

- By 2020, fewer than 20% of adults in the Netherlands will smoke
- By 2020, 50% of adults who smoke will make a serious attempt to stop smoking
- By 2020, fewer than 5% of pregnant women in the Netherlands will smoke

The full text of the [National Prevention Agreement](#) can be found at the website of the national government of the Netherlands. This website also includes more detailed information about the policies which have resulted from the Agreement.

THE ROLE OF THE TRIMBOS INSTITUTE

The Trimbos Institute publishes key national statistics on

smoking, alcohol use, and drug use. Key smoking statistics include, but are not limited to, smoking rates, trends in the number of quit attempts, and the number of adults who use electronic cigarettes. Both local and national government authorities in the Netherlands use these statistics to monitor tobacco use and to monitor the effectiveness of various tobacco control policies. Experts at the Trimbos Institute used data from surveys such as the Health Survey, the Health Behaviour in School-aged Children survey, the Dutch National School Survey on Substance Use, and the Dutch Monitor on Substance Use and Pregnancy to calculate the statistics presented in this bulletin.

The Trimbos Institute is part of the Lifestyle Monitor Consortium. [The Lifestyle Monitor](#) is an consortium of various lifestyle data collections, covering smoking, alcohol and drug use, physical activity, and nutrition in the Netherlands. The consortium brings together various parties that focus on lifestyle in the Netherlands. This consortium is coordinated by the National Institute for Public Health and the Environment (RIVM) and was commissioned by the Ministry of Health, Welfare and Sport in the Netherlands. The Trimbos Institute is one of the consortium members. Member organizations synchronize survey content and data collection methods across health-related population surveys in the Netherlands.

COLLECTING DATA ON TOBACCO USE IN THE NETHERLANDS

This bulletin describes the main data collection methods related to tobacco use in the Netherlands in detail: the Health Survey, the Health Behaviour in School-aged Children survey, the Dutch National School Survey on Substance Use, and the Dutch Monitor on Substance Use and Pregnancy. These surveys are used to collect data about smoking by adults, adolescents, and pregnant women. The most recent statistics on smoking by adults, by adolescents, and by pregnant women can be found at the Trimbos Institute website (in Dutch):

- [Smoking by adults](#)
- [Smoking by adolescents](#)
- [Smoking by pregnant women](#)



THE CONTINUOUS SURVEY OF SMOKING HABITS (1988 – 2014)

Between 1988 and 2014, statistics on adult tobacco use in the Netherlands were based on the Continuous Survey of Smoking Habits. This was a cross-sectional population survey of respondents 15 years old and older in the Netherlands. Each year, about 18,000 respondents completed the survey. After applying weights for several demographics, such as age, sex, and education, this sample represented the adult population in the Netherlands. The survey included various questions about cigarette smoking and other forms of tobacco use. The annual data collection ended in 2014. From 2014 onwards, the Health Survey was used to calculate the annual smoking rates of adults (18 years old or older).

More information about the survey method can be found [in this research article](#).¹

THE HEALTH SURVEY (2014 - PRESENT)

The Health Survey is an annual cross-sectional population-based survey conducted by the national statistical office, Statistics Netherlands, since 1981. From 2014 onwards, this survey has been used to calculate the official smoking rate of adults (18 years old or older) in the Netherlands.

Survey population

Although data is collected from respondents who are 12 years old or older, the Trimbos Institute uses data from respondents 18 years old and older for calculating smoking rates in the Netherlands. We use other surveys to calculate smoking rates among people younger than 18 years old (see next chapter). About 7000 people who are 18 years old or older complete the Health Survey each year.

Survey item

Smokers are defined as those who respond 'yes' to the question 'Do you sometimes smoke?'. This group includes daily and non-daily smokers. Between 2016 and 2018, respondents were asked whether they used e-cigarettes (yes/no). From 2019 onwards, respondents were asked to specify how often they used e-cigarettes and we only reported regular use. This 'regular' use includes current daily and non-daily use, but not former use. In 2020, we included the use of heated tobacco products in the survey. Between 2020 and 2021, the wording of the response options in both the electronic cigarettes use question and the heated tobacco product use question were changed. As this change may have impacted the prevalence of regular use, the 2021 data is presented separately below.

Frequency

Data are collected annually.

Sampling technique

Statistics Netherlands collects the data through an annual random representative sample from the municipal population registry. Respondents are first approached by mail to participate in the survey via internet. A selection of those who are invited to participate in the survey but do not respond are approached for a face-to-face interview. Using a variety of selection criteria and statistical weighting techniques, the final dataset represents the adult population in the Netherlands.

The Lifestyle Monitor consortium

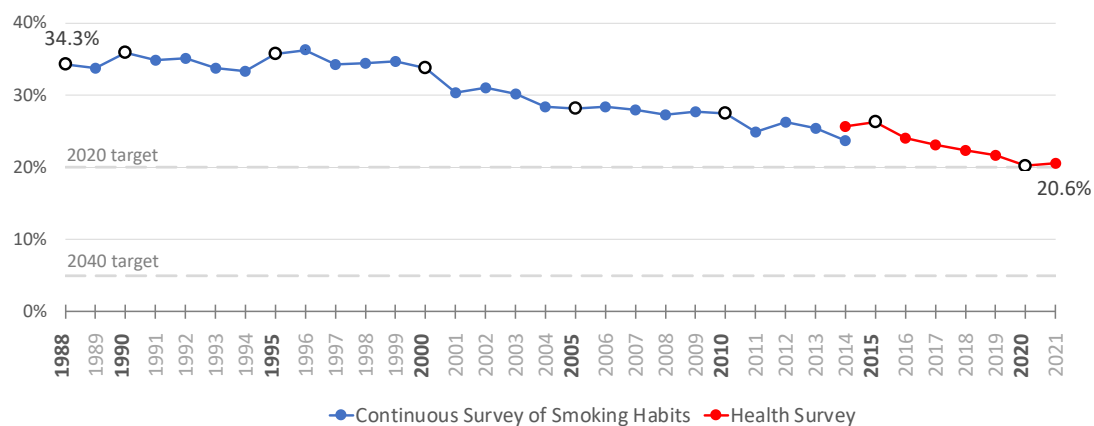
From 2014 onwards, the Health Survey has been included the Lifestyle Monitor consortium. This consortium is a collaboration between various research institutes in the Netherlands. The consortium is coordinated by the National Institute for Public Health and the Environment (RIVM) and has been commissioned by the Ministry of Health, Welfare and Sport in the Netherlands. The Trimbos Institute is one of the consortium members. Members synchronize survey content and data collection methods across health-related population surveys in the Netherlands. The Health Survey is one of the surveys coordinated by the consortium. The Dutch National School Survey on Substance Use is another such survey. This survey will be described in a later section of this report.

More information about the design of the Health Survey can be found on [the website of Statistics Netherlands](#).² Our report [Smoking in the Netherlands: key statistics for 2021](#) presents a more comprehensive selection of key statistics on tobacco smoking in the Netherlands.³



SMOKING AMONG ADULTS

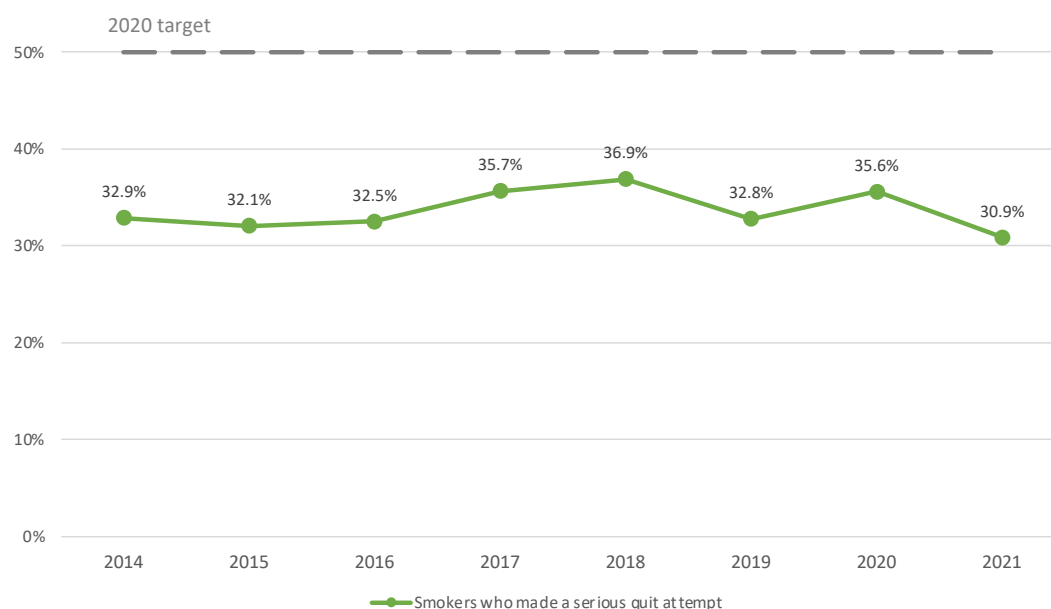
Figure 1. Smoking rate of adults in the Netherlands (18 years old or older)



Note: The adult smoking rate has decreased by about 14% between 1988 and 2021. The adult smoking rate needs to decrease by an additional 15% in the next two decades in order to reach 5% by 2040, which is the goal established by the National Prevention Agreement.

First source: The Continuous Survey of Smoking Habits, 1988-2014. This survey was conducted by TNS-NIPO on behalf of Stivoro. *Second source:* Health Survey/Lifestyle Monitor, Statistics Netherlands (CBS) in collaboration with National Institute for Public Health and the Environment (RIVM) and Trimbos Institute, 2014-2021.

Figure 2. Proportion of adults who smoke in the Netherlands who had made a serious quit attempt in the 12 months prior to the survey

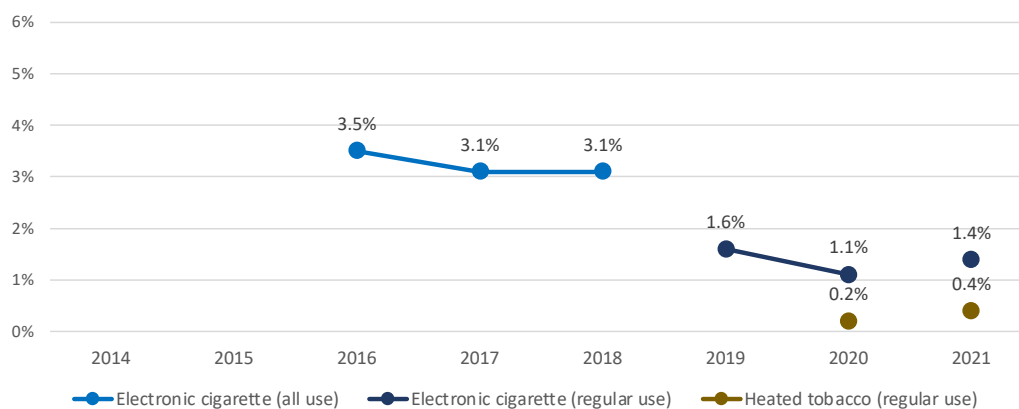


Note: In the Netherlands, about a third of all adults (18 years old or older) who smoke make a serious attempt to quit smoking each year. A serious quit attempt is defined as one that lasts for at least 24 hours. This is well below the 2020 goal of 50% set by the National Prevention Agreement.

Source: Health Survey/Lifestyle Monitor, Statistics Netherlands (CBS) in collaboration with National Institute for Public Health and the Environment (RIVM) and Trimbos Institute, 2014-2021.



Figure 3. Prevalence of electronic cigarettes use by adults in the Netherlands



Note: Figure 3 presents information about electronic cigarette (e-cigarette) use by adults (18 years old and older) in the Netherlands. 1.4% of adults in the Netherlands used an e-cigarette regularly in 2021. Of those adults who used e-cigarettes regularly, 0.6% used an e-cigarette every day. 0.4% of adults used a heated tobacco product regularly. The dataset did not include enough heated tobacco products users to reliably calculate the prevalence of daily use.

Source: Health Survey/Lifestyle Monitor, Statistics Netherlands (CBS) in collaboration with National Institute for Public Health and the Environment (RIVM) and Trimbos Institute, 2014-2021.

About the sale of e-cigarettes: E-cigarettes have been available for sale in the Netherlands since 2007. The contents of e-cigarettes and the sale of e-cigarettes are regulated by the [Dutch Tobacco Act](#). The sale of nicotine and non-nicotine e-cigarette liquid are restricted to adults (18 years old and older).



HEALTH BEHAVIOUR IN SCHOOL-AGED CHILDREN SURVEY

The Health Behaviour in School-aged Children (HBSC) survey is a school-based survey with data collected in the classroom. The goal of the HBSC is to study the health behavior, including tobacco and e-cigarette use, of school children in over 40 countries. The data allow researchers to make cross-national comparisons and conduct trend analyses. In the Netherlands, the data are collected by Utrecht University, the Trimbos Institute, and the Netherlands Social and Cultural Planning Office.

Survey population

Data are collected among adolescents aged 11 to 16 years old. From 2001 to 2017, data were collected among primary school students (class 8) and secondary school students (classes 1 to 4). These data were collected at all levels of education. In the Netherlands, secondary education consist of 4 to 6 years of training. From 2017 onwards, all classes from all levels of secondary schools were included. In 2021, 5787 secondary school students participated in the study, of which 5243 were aged 12 to 16 years old. The statistics presented below include only data from secondary school students aged 12 to 16 years old.

Survey items

In the survey, respondents are asked if they had smoked at least once in their lifetime, had smoked in the past month, or smoke every day. From 2001 to 2013, smoking status was collected through the following questions: 'Have you ever smoked cigarettes or roll-your-own cigarettes, even if it was only one single cigarette or a few puffs?' Response options were 'I never smoked', 'I smoked once or twice', 'I sometimes smoke, but not every day', 'I used to smoke, but quit completely', and 'I smoke every day'. Smoking in the past month was collected through the following question 'How many cigarettes did you smoked on average in the past 4 weeks?'. Response options were 'I never smoked', 'I did not smoke in the past 4 weeks', 'fewer than 1 cigarette per week', 'fewer than 1 cigarette per day', '1-5 cigarettes per day', '6-10 cigarettes per day', '11-20 cigarettes per day', and 'more than 20 cigarettes per day'. From 2017 onwards, smoking status was collected through the following questions: 'Have you ever smoked?' and 'On how many days in the past four weeks did you smoke cigarettes?'. Response options for the latter question were 'never', '1-2 days', '3-5 days', '6-9 days', '10-19 days', '20-29 days', and '30 or more days'.

In 2017, data on e-cigarette use was collected through the following question: 'Have you ever used an e-cigarette'. Response options were: 'Yes, more than once', 'Yes, once', 'No, never', and 'I don't know what that is'. From 2021 onwards, the survey used the following question: 'On how many days in your life / the past 4 weeks have you used an e-cigarette?' and the response options included an option for never use.

Frequency

The survey is conducted once every four years. The Health Behaviour in School-aged Children survey and the Dutch National School Survey on Substance Use consist of the same survey items and have a similar data collection design. As a result of this, researchers at the Trimbos Institute are able to calculate statistics once every two years.

Sampling technique

Surveys are administered in classrooms among a nationally representative sample of children in secondary schools. These surveys cover a wide range of health-related topics.

More information about the survey method can be found at [the HBSC website](#).





DUTCH NATIONAL SCHOOL SURVEY ON SUBSTANCE USE

Since its inception in 1984, the Dutch National School Survey on Substance Use has been conducted every four years. In 2019, data was collected in 274 primary and secondary schools in the Netherlands. That year, 5587 secondary school students participated in the study.

Survey population

The survey population consists of students in primary school (class 7 and 8) and secondary school (all levels, all classes). Typical respondents are 12 to 18 years old. The statistics presented below include only data from secondary school students aged 12 to 16 years old.

Survey item

In the survey, respondents are asked if they had smoked at least once in their lifetime, had smoked in the past month, or smoke every day. From 1999 to 2011, smoking status was collected through the following questions: 'Have you ever smoked cigarettes or roll-your-own cigarettes, even if it was only one single cigarette or a few puffs?' Response options were 'I never smoked', 'I smoked once or twice', 'I sometimes smoke, but not every day', 'I used to smoke, but quit completely', and 'I smoke every day'. Smoking in the past month was collected through the following question 'How many cigarettes did you smoked on average in the past 4 weeks?'. Response options were 'I never smoked', 'I did not smoke in the past 4 weeks', 'fewer than 1 cigarette per week', 'fewer than 1 cigarette per day', '1-5 cigarettes per day', '6-10 cigarettes per day', '11-20 cigarettes per day', and 'more than 20 cigarettes per day'. From 2015 onwards, smoking status was collected through the following questions: 'Have you ever smoked?' and 'On how many days in the past four weeks did you smoke cigarettes?'. Response options for the latter question were 'never', '1-2 days', '3-5 days', '6-9 days', '10-19 days', '20-29 days', and '30 or more days'.

In 2015 and 2019, data on e-cigarette use was collected through the following question: 'Have you ever used an e-cigarette?'. Response options were: 'Yes, more than once', 'Yes, once', 'No, never', and 'I don't know what that is'. From 2023 onwards, the survey used the following question: 'On how many days in your life / the past 4 weeks have you used an e-cigarette?' and the response options included an option for never use.

Frequency

The survey is conducted once every four years. The Health Behaviour in School-aged Children survey and the Dutch National School Survey on Substance Use consist of the same survey items and have a similar data collection design. As a result of this, researchers at the Trimbos Institute are able to calculate statistics once every two years.

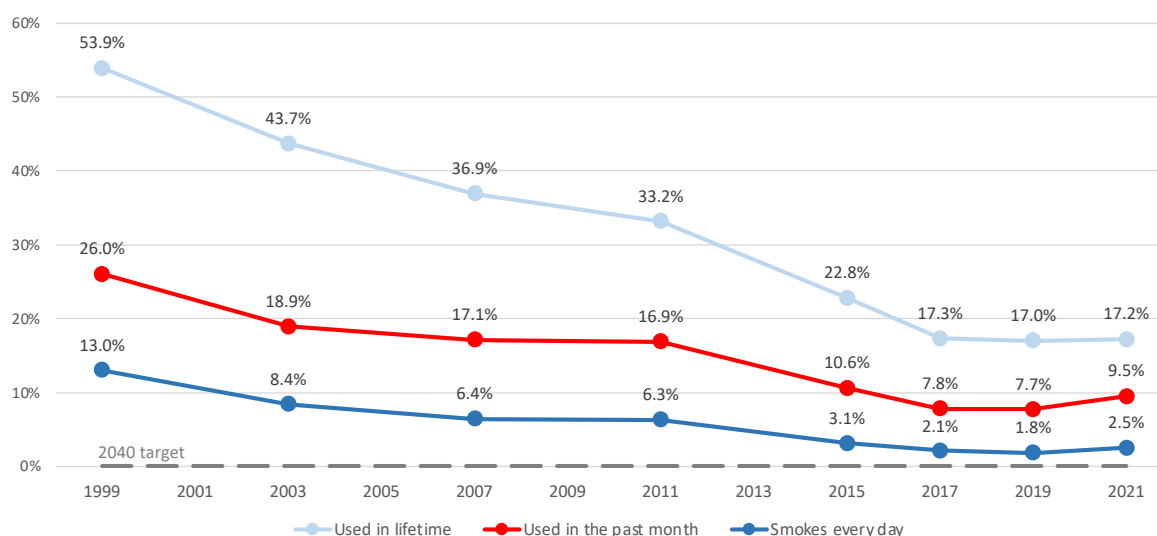
Sampling technique

Surveys are administered in classrooms among a nationally representative sample of adolescents.

More information about the survey method can be found at [the Dutch National School Survey on Substance Use website](#) (in Dutch).



Figure 4. Cigarette smoking rates of adolescents (12-16 years old) in the Netherlands

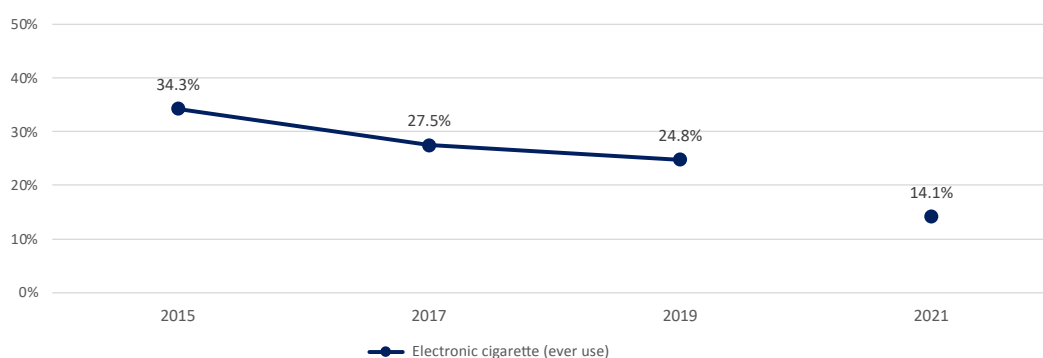


Note: In 2021 in the Netherlands, about 1 in 11 adolescents 12-16 years old (9.5%) smoked in the past month. In addition, 17.2% had smoked at least once in their lifetime, while 2.5% reported smoking cigarettes every day.

First source: The Dutch National School Survey/Lifestyle Monitor, Trimbos Institute in collaboration with National Institute for Public Health and the Environment (RIVM), 1999-2021.

Second source: The Health Behaviour in School-aged Children/ Lifestyle Monitor, University Utrecht (UU), Trimbos Institute, and The Netherlands Institute for Social Research (SCP) in collaboration with National Institute for Public Health and the Environment (RIVM), 1999-2021.

Figure 5. Prevalence of electronic cigarettes use among adolescents (12 to 16 years old) in the Netherlands



Note: In 2021, 14.1% adolescents in the Netherlands reported having used an electronic cigarette. A different survey item was used in 2021 and this strongly influenced the use rate. In 2015 to 2019, the surveys used the following question: ‘Have you ever used an e-cigarette’. From 2021 onwards, the survey used the following question: ‘On how many days in your life / the past 4 weeks have you used an e-cigarette?’ and the response options included an option for never use.

First source: The Dutch National School Survey/Lifestyle Monitor, Trimbos Institute in collaboration with National Institute for Public Health and the Environment (RIVM), 1999-2021.

Second source: The Health Behaviour in School-aged Children/ Lifestyle Monitor, University Utrecht (UU), Trimbos Institute, and The Netherlands Institute for Social Research (SCP) in collaboration with National Institute for Public Health and the Environment (RIVM), 1999-2021.



THE DUTCH MONITOR ON SUBSTANCE USE AND PREGNANCY

The Dutch Monitor on Substance Use and Pregnancy is a representative cross-sectional population-based survey of women's tobacco, alcohol, and drug use before, during, and after pregnancy. With respect to the items on smoking in the survey, women were asked questions about their own smoking behavior, their partner's smoking behavior, and whether they had discussed smoking with a healthcare professional. The survey was conducted in 2016, 2018, and 2021. It is supported by the Netherlands Ministry of Health, Welfare and Sport.

Survey population

The survey population consists of women with young children (defined as children under 2 years old). Women aged 16 years or older are included.

Survey item

In the survey, respondents who smoked were identified using the following question: 'Have you ever smoked in your lifetime?' and 'Did you smoke in the four weeks preceding your pregnancy?'. 'Smoking' referred to the use of factory-made cigarettes, roll-your-own tobacco, and cigars. Those respondents who reported having ever smoked were asked 'Did you smoke in the first / second / third trimester of your pregnancy?'

Frequency

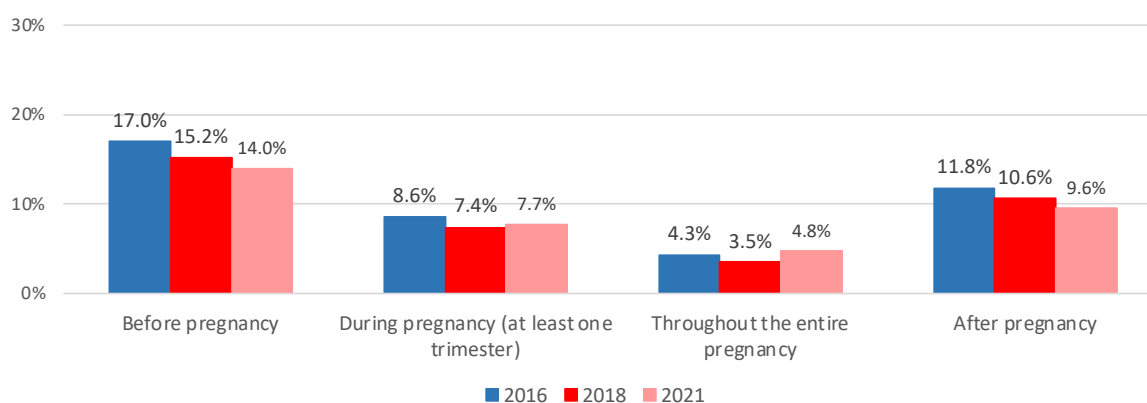
Data are collected once every two years. Due to the COVID-19 pandemic, the 2020 survey was conducted in 2021.

Sampling technique

Women with young children completed the survey while visiting a **youth health care center**, which is a preventive public health clinic for all children in the Netherlands. In 2021, data were collected at 73 youth health care centers in 49 randomly selected municipalities in the Netherlands. That year, 992 women participated in the survey. This sample was nationally representative. However, women with a lower educational level and women with a migration background were slightly underrepresented. The data was weighted for age, education, urban density, and migration background.

The reports of the [2016](#), [2018](#), and [2021](#) studies can be found on our website (in Dutch). More in-depth information about the survey method can be found in the English-language summary of the 2018 survey '[Monitor on substance use and pregnancy 2018](#)'.⁴ Our report '[Smoking cessation counselling in maternity care in the Netherlands](#)' describes the maternity care system in the Netherlands in more detail.⁵

Figure 6. Prevalence of smoking tobacco before, during, and after pregnancy in the Netherlands



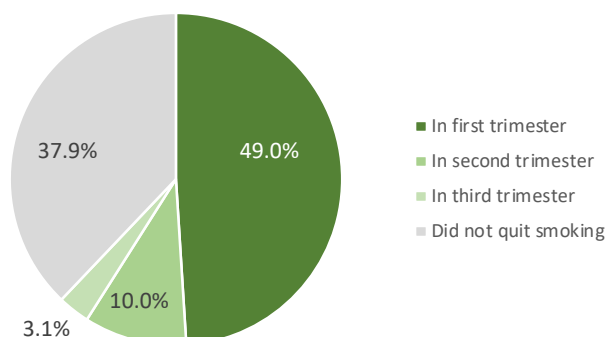
Note: In 2021, 14.0% of all women in the Netherlands smoked before pregnancy, 7.7% smoked during at least one trimester, 4.8% smoked during the entire pregnancy, and 9.6% smoked after pregnancy. These smoking rates at the four perinatal stages did not increase or decrease significantly between 2016 and 2021.

Source: The Dutch Monitor on Substance Use and Pregnancy.



SMOKING TOBACCO DURING PREGNANCY

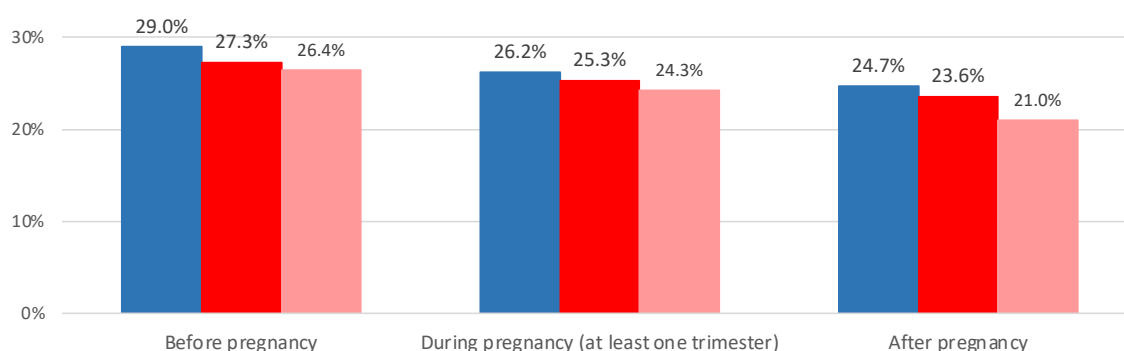
Figure 7. Proportion of women who smoked tobacco before pregnancy and quit during pregnancy in the Netherlands in 2021



Note: In 2021, among women who smoked before pregnancy, 49.0% quit smoking in the first trimester. An additional 10.0% quit smoking tobacco in the second trimester and 3.1% during the third trimester. Of all women who smoked in the four weeks before pregnancy, 37.9% continued smoking during the pregnancy.

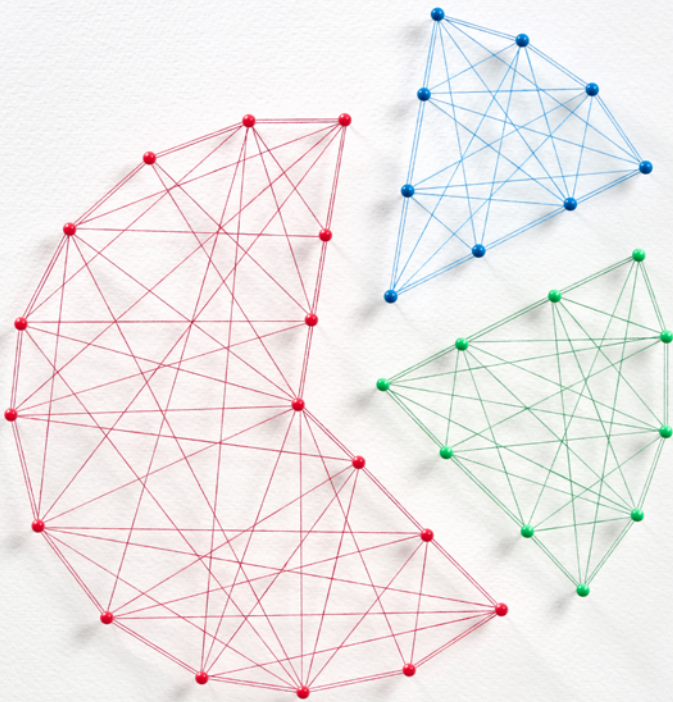
Source: The Dutch Monitor on Substance Use and Pregnancy.

Figure 8. Tobacco smoking rates of partners of women before, during, and after pregnancy in the Netherlands in 2021



Note: In 2021, 26.4% of partners of women smoked before pregnancy. In addition, 24.3% smoked during at least one trimester during pregnancy, while 21% of partners of women smoked after pregnancy. While these smoking rates appear to decrease over the years, these differences are not statistically significant. Partners' smoking status was reported by pregnant women.

Source: The Dutch Monitor on Substance Use and Pregnancy.



FURTHER READING...

Want to know more about tobacco use and exposure to tobacco smoke in the Netherlands? The following publications may be interesting for you:

- [Smoking cessation counselling in maternity care in the Netherlands](#)
- [Tobacco Industry Interference Index 2021: the Netherlands](#)
- [Local tobacco control policies in the Netherlands](#)

OUR MISSION...

The Netherlands Expertise Centre for Tobacco Control continues to monitor tobacco use in the Netherlands. We publish the most recent key statistics on tobacco use, alcohol use and drugs use on our website: trimbos.nl/kennis/kerncijfers (in Dutch).

Please contact Jeroen Bommel  (jbommele@trimbos.nl) if you have any questions regarding this bulletin.

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Colophon

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