Monitor Dutch **cervical cancer** screening programme **2022**

Edition October 2023

Key findings 2022

Of the **720,275** invitees, **46%** participated. More individuals participated via a smear test at the GP (**78%**) than via a SSK (**22%**).

Of all participants, **10.8%** were hrHPV-positive. Of those with an analysable test, **2.2%** were directly referred. A control smear was advised to **8.1%**.

In **1.1%** of all participants, cervical cancer or a precancerous lesion was found (CIN 2+). This equates to **3,642** individuals.

Within the target population of the screening programme, the coverage rate for cervical cancer was **69.4%**.

1 For endnotes, see page 16

Figure 1 / **Flowchart cervical cancer screening programme process 2022** (source: BVO NL and Palga)

Erasmus MC Cancer Institute

Content

Context

Introduction: **Cervical cancer screening programme**

In the Netherlands, individuals aged 30 to 65 are invited to participate in the cervical cancer screening programme according to the invitation schedule (see context 1). Individuals can either participate through a cervical smear at the GP or a self-sampling kit (SSK), which both aim to determine whether participants have an increased risk of developing cervical cancer. By detecting this risk and removing precancerous lesions, cervical cancer can be prevented. In addition, cervical cancer can be detected at the earliest possible stage, which increases the chances of successful treatment compared to when cervical cancer is detected at a late stage. The ultimate goal of the cancer screening programme is to prevent cervical cancer as much as possible and reduce cervical cancer mortality and disease burden for people with cervical cancer.

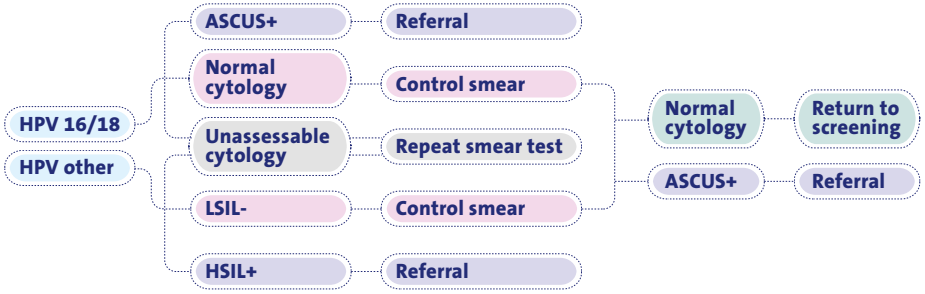


Figure 2 / **Visual representation of the renewed referral schedule** effective since 11 July 2022.

Context 1: **Changes within the cervical cancer screening programme**

In 2021, some changes were made within the cervical cancer screening programme. As a result, the situation in 2022 was not directly comparable to that of previous years. It is therefore important to consider the following changes when interpreting the results shown.

Invitation schedule

From 1 January 2022, the invitation schedule for the cervical cancer screening programme has changed. Whereas all individuals aged 30 to 60 were previously invited every 5 years, the invitation policy now depends on the individual's age and prior hrHPV result. Individuals aged 45 and 55 are only invited if they did not participate or received a positive hrHPV result in the previous screening round. Individuals aged 65 are invited only if they were hrHPV-positive in the previous screening round without being referred to a gynaecologist.

Referral schedule

On 11 July 2022, a new referral schedule was introduced as well. Previously, all participants with an hrHPV-positive result and cytological abnormalities (ASCUS+) were immediately referred to the gynaecologist. In case of an hrHPV-positive result and a normal cytology, participants were advised to have a control smear after 6 months. In the new schedule, this period has been extended to 12 months. In addition, participants are now referred based on HPV genotyping (type 16, 18 or other). Participants with 'HPV other' are only referred directly in case of a HSIL+ (see figure 2).

1 / **Invitations, participation and coverage**

Table 1 / **Invitations and participation** by year, measured on 1 April in the following year (source: BVO NL)

	2018	2019	2020	2021	2022
Previously permanently opted out for reason other than hysterectomy [4]	8,360	8,700	9,178	9,268	6,207
Invitations sent	798,973	807,557	596,579	1,014,396	720,275
Participants primary test	461,253	453,542	298,059	555,506	331,657

Figure 3 / **Participation rate primary test** by year and reference period, calculated based on the total number of individuals invited or definitively opted out for a reason other than a hysterectomy (source: BVO NL) [5]

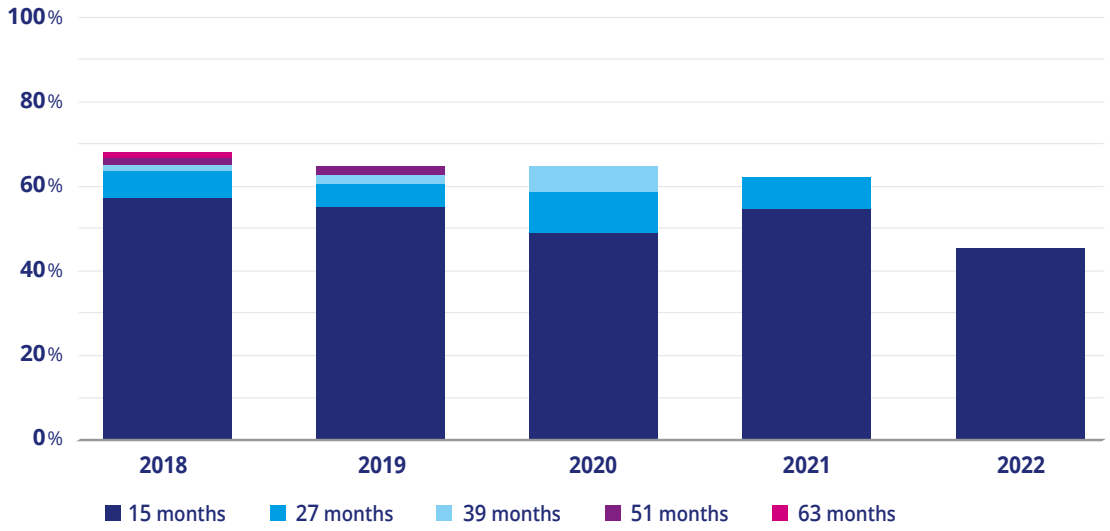


Table 2 / **Participation rate primary test**, by age and year, measured on 1 April in the following year (15 months) and 2023 (most recent reference date) and calculated based on the total number of individuals invited or definitively opted out for a reason other than a hysterectomy (source: BVO NL)

	2018		2019		2020		2021		2022	
Reference period (months)	*15*	*63*	*15*	*51*	*15*	*39*	*15*	*27*	*15*	(*n=participants*)
Age (years)										
30-34	46%	64%	45%	61%	40%	61%	44%	57%	41%	*n=56,170*
35-39	51%	64%	50%	62%	44%	63%	49%	60%	44%	*n=55,942*
40-44	58%	67%	56%	65%	49%	65%	54%	63%	49%	*n=56,331*
45-49	60%	67%	59%	66%	52%	66%	56%	63%	27%	*n=13,633*
50-54	61%	68%	60%	67%	53%	67%	58%	65%	54%	*n=67,563*
55-59	62%	66%	60%	65%	55%	66%	60%	65%	27%	*n=13,193*
60-64	61%	64%	60%	63%	53%	62%	59%	63%	56%	*n=67,153*
65-69	-	-	-	-	-	-	-	-	80%	*n=1,672*
Total	**57.1%**	**65.9%**	**55.6%**	**64.2%**	**49.2%**	**64.4%**	**54.3%**	**62.2%**	**45.7%**	*n=331,657*

- In 2022, the participation rate was 45.7%. This is significantly lower than in 2021, when the participation rate was 54.3% with a similar reference period. Participation rates were lower compared to 2021 for all age categories. The declining trend in participation rates, observed in recent years, thus continues.
- The largest decline is observed for the age categories 45-49 years and 55-59 years. Due to the changes in the invitation schedule (see context 1), this group mainly contains individuals who did not participate in the previous screening round. This selective group of individuals seems less willing to participate.
- The participation rate was highest in the group of 65-69-year-olds, which includes only participants who participated in the previous screening round and then received a hrHPV positive result (see context 1).
- The participation rate for 2021 increased from 54.3% (after 15 months) to 62.2% (after 27 months).
- For 2018, the participation rate after 63 months (around 5 years) was 65.9%. Although participation with a reference period of 15 months was significantly lower for 30-34-year-olds than for the other age categories, this difference is much smaller after 63 months. In all reporting years, participants in the youngest age category were more likely to participate after 15 months compared to participants in the other age categories.
- Partly due to the influx of individuals from Ukraine into the Netherlands, the number of so-called additional invitees was higher in 2022 compared to previous years. It is known that participation rates of immigrants are generally lower than in individuals eligible for participation based on their year of birth. The relatively high percentage of additional invitees (8.8%) may have contributed to the overall decline in participation rates.

Figure 4 / **Proportion of individuals participating in screening via smear test and SSK** by year, based on the total number of participants (source: BVO NL)

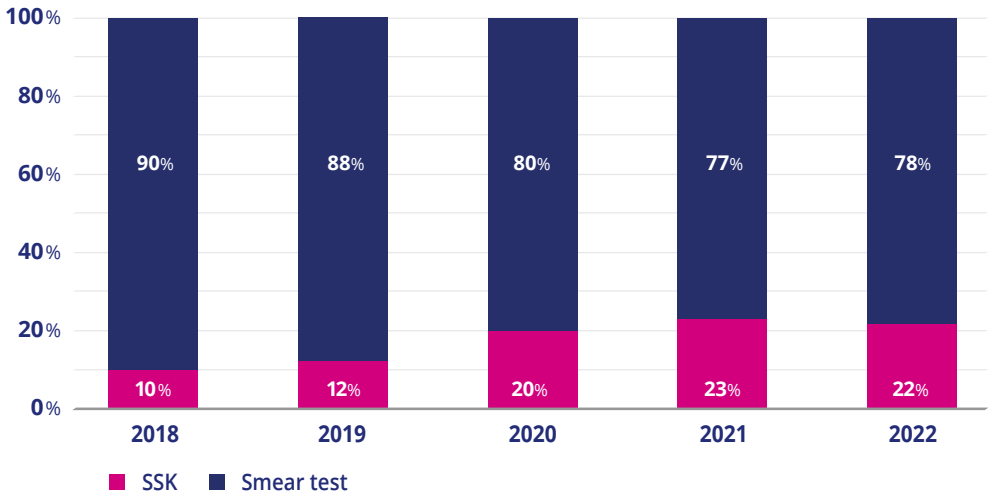
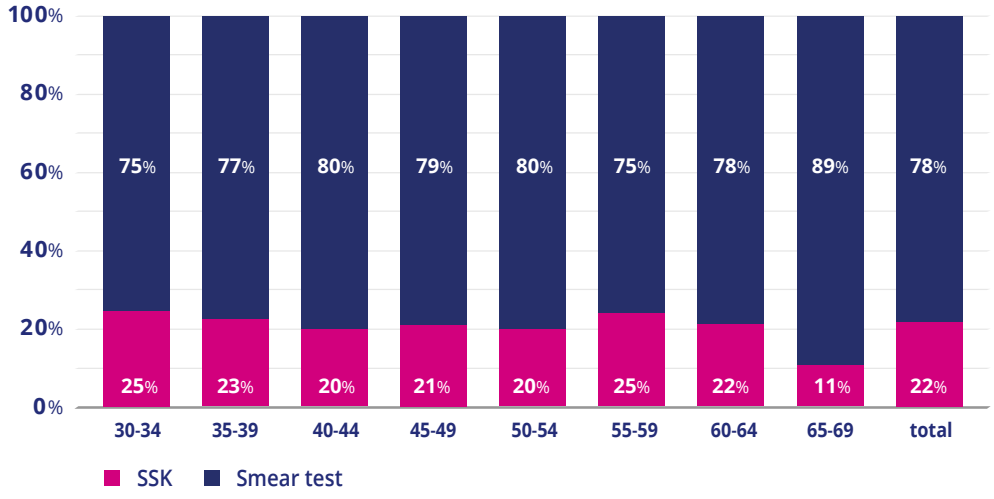


Figure 5 / **Proportion of individuals participating in the primary test via smear test and SSK in 2022** by age, based on the total number of participants (source: BVO NL)



- In 2022, 78% of participants had a smear test taken at the GP, versus 22% who participated via a SSK. These rates are similar to 2021.
- The increased trend in participation via the SSK did not continue in 2022. This may be due to the way the SSK is currently mentioned in the invitation letter. Due to the COVID-19 pandemic, more emphasis was placed on the SSK from autumn 2020. Since September 2021, this is no longer the case.
- The SSK was least used among participants aged 65-69 years.

Table 3 / **Participation rate cytology after hrHPV-positive SSK** by age and year (source: BVO NL) [6]

	2018	2019	2020	2021	2021	2022
Reference period (months)	*63*	*51*	*39*	*27*	*15*	*15*
Age (years)						
30-34	92%	91%	91%	90%	*85%*	*84%*
35-39	88%	90%	91%	89%	*85%*	*81%*
40-44	89%	89%	90%	89%	*84%*	*80%*
45-49	91%	88%	90%	88%	*86%*	*74%*
50-54	87%	89%	88%	90%	*86%*	*83%*
55-59	87%	86%	90%	90%	*85%*	*78%*
60-64	85%	89%	90%	88%	*85%*	*86%*
65-69	-	-	-	-	-	*81%*
Total	**90%**	**89%**	**90%**	**89%**	***85%***	***82%***

Table 4 / **Participation rate after invitation for control smear** by age and year (source: BVO NL) [7]

	2018	2019	2020	2021	2022
Reference period (months)	*63*	*51*	*39*	*27*	*15*
Age (years)					
30-34	90%	90%	86%	84%	*77%*
35-39	90%	91%	88%	85%	*75%*
40-44	91%	92%	89%	87%	*85%*
45-49	92%	93%	91%	88%	*80%*
50-54	92%	93%	92%	89%	*87%*
55-59	93%	94%	92%	90%	*78%*
60-64	93%	94%	94%	92%	*88%*
65-69	-	-	-	-	*90%*
Total	**91%**	**92%**	**89%**	**87%**	***81%***

- In 2022, cytology was performed in 82% of individuals with an hrHPV-positive. In 2021, this was 85% with a comparable 15-month reference period.
- While the decline in participation is observed for almost all age categories, it is greater for the 45-49 and 55-59-year-olds. Even when this selective group of participants (see context 1) does participate in the screening programme via a SSK, they thus seem less willing to undergo a cytology test in case of an hrHPV-positive result.
- The participation rate after invitation for a control smear was 81% in 2022. In 2021, this was 87% with a 27-month reference period.

Table 5 / **Coverage rate** by age and year (source: Palga, BVO NL en IKNL)

	2018	2019	2020	2021	2022 [10]
Age (years)					
30-34	65.2%	65.0%	61.7%	64.2%	62.0%
35-39	71.2%	71.0%	67.4%	69.7%	62.9%
40-44	74.0%	74.1%	71.0%	72.8%	66.6%
45-49	75.4%	73.6%	69.4%	70.9%	72.6%
50-54	77.9%	77.9%	73.4%	75.3%	72.0%
55-59	78.9%	78.1%	73.0%	75.0%	75.7%
60-64	76.8%	77.0%	71.7%	74.3%	72.4%
Total	**74.3%**	**73.8%**	**69.7%**	**71.7%**	**69.4%**
Primary tests (screening programme)	65.9%	65.5%	60.8%	63.2%	58.2%
Tests outside of the screening programme [8]	8.4%	8.4%	9.0%	8.6%	5.3%
Hysterectomy (estimated) [9]		*was left out of consideration*			5.9%

- Of all individuals registered in the Netherlands who were eligible to participate in the screening programme in the past five years (based on the invitation schedule) or did not receive an invitation because of an hrHPV-negative result during the previous round (see context 1), 69.4% were protected against getting cervical cancer by 2022.
- The majority were protected through participation in the screening programme (58.2%). Others were considered protected because they participated in tests outside of the screening programme (5.3%) or because they had undergone a hysterectomy (5.9%).

2 / **Outcomes and referrals**

Figure 6 / **hrHPV positivity rate in screening participants** by year and way of participation (source: BVO NL)

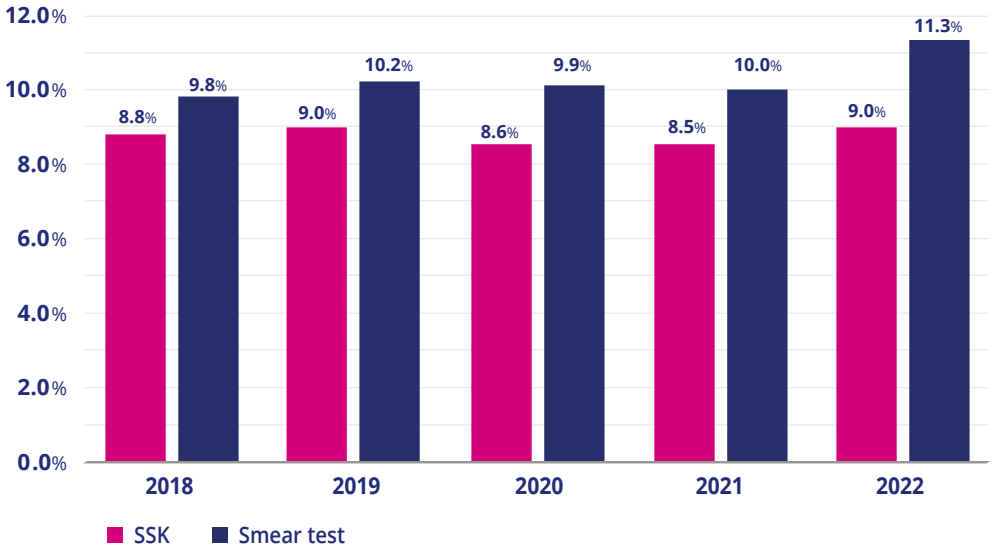
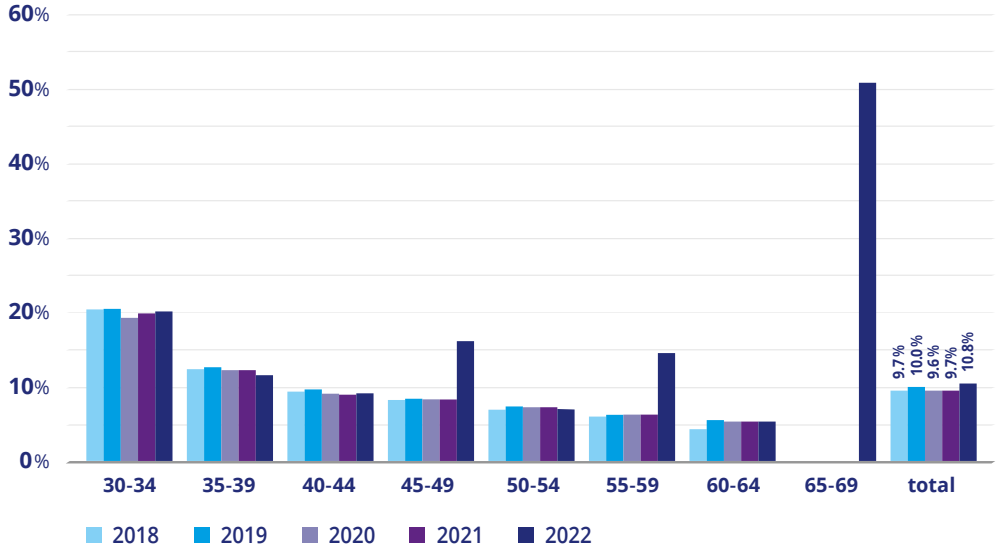


Figure 7 / **hrHPV positivity rate in screening participants** by age and year (source: BVO NL)



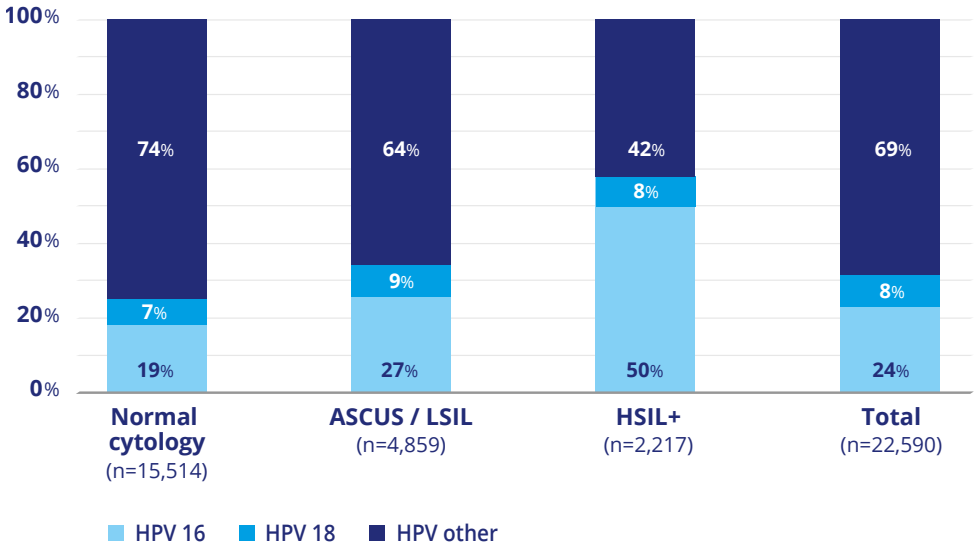
- As in previous years, the percentage of participants with a hrHPV-positive test was in 2022 higher among those participating in the primary test via a smear test (11.3%) than among those participating by SSK (9.0%).

- Overall, 10.8% of participants received an hrHPV-positive result in 2022. This an increase compared to previous years. This increase is caused by the higher positivity rates in the age categories 45-49, 55-59 and 65-69 years. Due to the change in the invitation schedule (see context 1), these groups include relatively more individuals who received an hrHPV-positive result in the previous screening round. This explains the higher rates in these age categories. For the other age categories, the percentage of participants with an hrHPV-positive test decreased slightly or remained constant.

Table 6 / **Cytology primary test** by year and method of participation (source: BVO NL)

	Smear test					SSK					Total				
	2018	2019	2020	2021	2022	2018	2019	2020	2021	2022	2018	2019	2020	2021	2022
Normal cytology	67.3%	68.5%	68.1%	70.3%	69.3%	64.6%	64.2%	66.3%	67.3%	67.5%	67.0%	68.1%	67.8%	69.8%	69.0%
ASCUS / LSIL	21.6%	21.8%	21.5%	19.4%	21.1%	20.6%	21.2%	20.0%	19.5%	20.8%	21.5%	21.8%	21.3%	19.4%	21.1%
HSIL+	10.9%	9.5%	10.2%	10.0%	9.3%	14.5%	14.4%	13.4%	12.9%	11.3%	11.2%	10.0%	10.8%	10.6%	9.6%

Figure 8 / **Genotyping hrHPV-positive participants in 2022**, by cytology result presented for individuals for whom cytology is assessable and genotyping is known (source: BVO NL) [11]

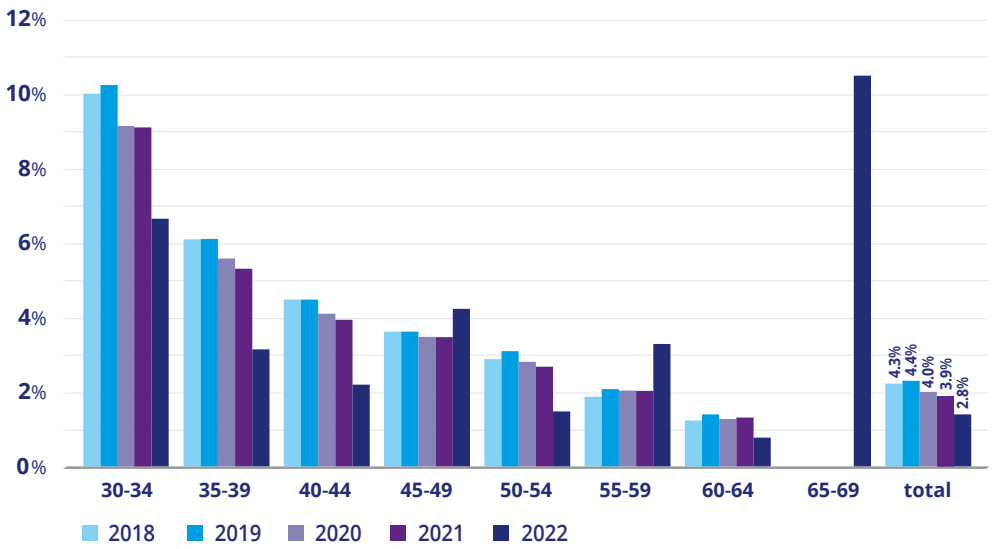


- High-grade abnormalities were more frequently associated with HPV 16. While 19% of those with normal cytology had the HPV 16 genotype, this was 50% for those with HSIL+.
- Of the hrHPV-positive participants with an ASCUS or LSIL, 3,109 individuals (64%) had the genotype HPV other. Whereas these participants would previously be immediately referred, they are now invited for a control smear after 12 months according to the renewed referral schedule (see context 1).
- As in previous years, abnormal cells were found more often in participants who initially participated in screening via a SSK (32.1%) than in those who had a smear test done at the GP (30.4%). High-grade abnormalities (HSIL+) were also found more often through a SSK (11.3%) than through a smear test (9.3%).
- In 2022, fewer participants had a HSIL+ cytology result (9.6%) compared to 2021 (10.6%). This can be explained by the introduction of the renewed screening programme with HPV testing in 2017. Due to the 5-year invitation interval, the second screening round using the HPV DNA test started in 2022. When a more sensitive test is introduced, more abnormalities are usually detected and removed from the population during the first screening round. Because some abnormalities are already detected during the first round, the likelihood of high-grade abnormalities in subsequent rounds may be lower.

Table 7 / **Advice based on primary test** by year, calculated based on the number of persons with analysable tests (source: BVO NL)

	2018	2019	2020	2021	2021	2022
Reference period (months)	*63*	*51*	*39*	*27*	*15*	*15*
Direct referral	3.1%	3.1%	2.9%	2.7%	2.7%	2.2%
Repeat smear due to unassessable cytology or hrHPV undeterminable (no follow up)	0.05%	0.06%	0.06%	0.07%	0.08%	0.09%
Control smear after 6/12 months [12]	6.5%	6.8%	6.5%	6.7%	6.5%	8.1%
Return to screening programme	90.3%	89.9%	90.3%	90.3%	90.4%	89.2%
Cytology after positive SSK (no follow up)	0.08%	0.11%	0.16%	0.20%	0.27%	0.36%

Figure 9 / **Referral rate (direct and indirect)** by age and year, calculated based on the total number of participants who underwent a full screening examination (source: BVO NL) [13]



- The overall referral rate was 2.8% in 2022. This is lower than in 2021, when the referral rate was 3.1% with a comparable 15-month reference period.
- Due to the changes in the referral schedule (see context 1), there has been a decrease in the number of direct referrals. On the contrary, the number of advices for control smears has increased.
- As a result of the extension of the interval for the control smear (see context 1), a relatively large number of individuals have not yet been invited for a control smear by the reference date in 2022.
- Among all hrHPV-positive participants in whom cytology was performed, the overall referral rate was 25%. In 2021, this was 34% with a similar reference period.
- As in previous years, the referral rate for 30-34-year-olds was high in 2022. The highest referral rate is however observed in the 65-69-year-olds. This is related to the fact that all 65-69-year-olds were hrHPV-positive during the previous screening round (see context 1).
- As a result of the changes in the invitation schedules, participants in the 45-49 and 55-59 year age categories were also referred relatively frequently (see context 1). Again, this can be explained by the composition of these groups: individuals who were not screened or hrHPV-positive during the previous screening round.

Figure 10 / **Detection of CIN 2+ (direct and indirect)** by age and year and calculated based on the total number of participants (source: Palga) [14]

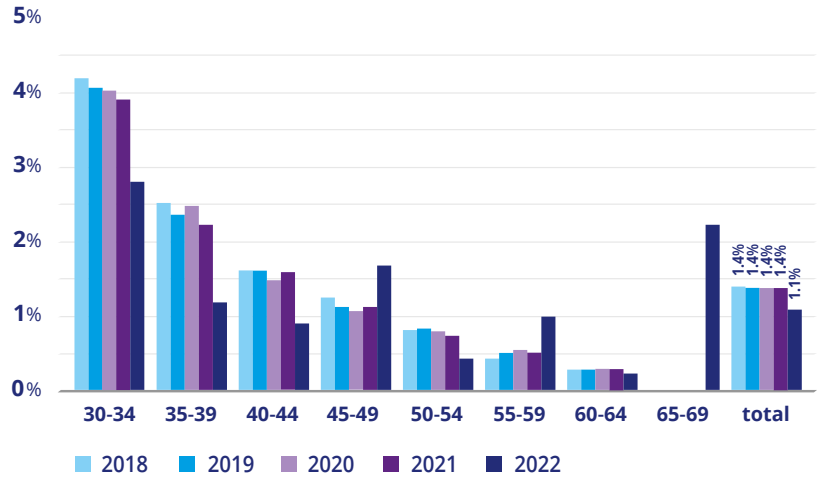


Figure 11 / **Detection after direct referral in 2022** within 150 days of the primary test (source: Palga)

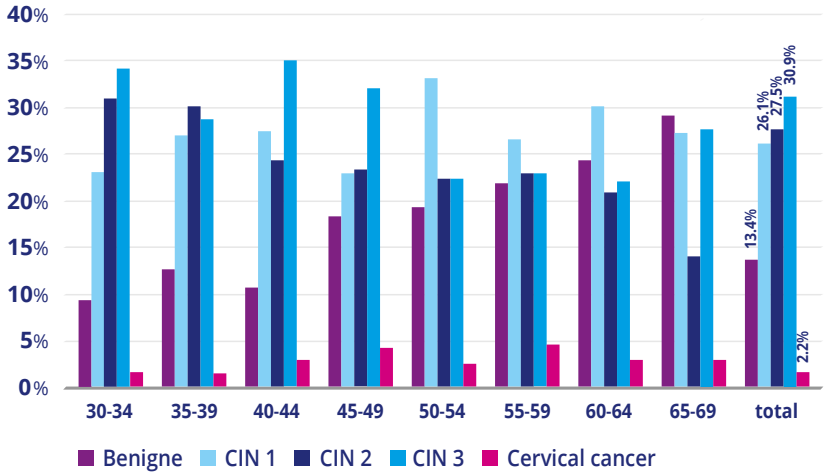


Table 8 / **Detection after direct referral within 150 days of the primary test** by year and way of participation (source: Palga)

	2021	2022		
	Total	**Total**	**Primary test smear**	**Primary test SSK**
Only cytology	1.9%	1.8%	1.6%	2.9%
Benign	14.2%	12.9%	13.4%	10.4%
CIN 1	28.8%	25.1%	25.7%	22.6%
CIN 2	23.3%	26.5%	26.3%	27.3%
CIN 3	26.9%	29.7%	29.4%	31.3%
Malignant, primary cervix carcinoma	2.0%	2.1%	2.0%	2.8%
Malignant, other	0.01%	0.02%	0.00%	0.10%
Insufficient quality	2.3%	1.6%	1.7%	1.1%
Subtotal	**99.3%**	**99.7%**	**100.0%**	**98.4%**
Unknown	0.67%	0.29%	0.02%	1.58%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**

- In 2022, the overall detection rate for CIN 2+ was 1.1%. This is similar to the detection rate measured for 2021 after the same reference period (15 months). The detection rate for 2021 increased to 1.4% after 27 months.
- Compared to previous years, the 2022 detection rates were higher for the 45-49, 55-59 and 65-69 age categories. This is most likely related to the changed invitation schedule, which increased the number of high-risk individuals in these specific groups (see context 1).
- Of the abnormalities found, the proportion of CIN 2, CIN 3 and malignancies was higher in 2022 than in 2021. This is probably a consequence of the renewed referral schedule, in which participants were referred in a more targeted manner (see context 1).

Table 9 / **Referral rates, followed referrals, detection (CIN 2+) and positive predictive value of the screening programme** by year (source: BVO NL, Palga and IKNL) [15]

	2018	2019	2020	2021	2021	2022
Reference period (months)	*63*	*51*	*39*	*27*	*15*	*15*
Referral rate total	4.3%	4.4%	4.0%	3.9%	*3.1%*	*2.8%*
Referral rate direct	3.2%	3.2%	3.0%	2.8%	*2.7%*	*2.4%*
Referral rate indirect	1.11%	1.23%	0.99%	1.11%	*0.45%*	*0.40%*
Histology or cytology performed after [16] referral	74%	73%	74%	74%	*70%*	*74%*
Histology or cytology performed after [16] direct referral	76%	75%	76%	77%	*73%*	*76%*
Histology or cytology performed after [16] indirect referral	70%	67%	69%	68%	*54%*	*62%*
Detection rate total	1.4%	1.4%	1.4%	1.4%	*1.1%*	*1.1%*
Detection rate direct	1.1%	1.1%	1.1%	1.1%	*1.0%*	*1.0%*
Detection rate indirect	0.3%	0.3%	0.3%	0.3%	*0.1%*	*0.1%*
Positive predictive value total	48%	47%	48%	48%	*50%*	*55%*
Positive predictive value direct	50%	49%	50%	52%	*52%*	*58%*
Positive predictive value indirect	41%	40%	40%	37%	*35%*	*33%*

Table 10 / **Indicators related to histological tests** by year (source: Palga and IKNL) [17]

	2018	2019	2020	2021	2021	2022
Reference period (months)	*63*	*51*	*39*	*27*	*15*	*15*
Proportion of referred individuals in whom histology was performed (at colposcopy)	73.5%	72.0%	72.9%	72.9%	*68.5%*	*72.9%*
Positive predictive value of histology at colposcopy	54.5%	52.7%	52.8%	51.6%	*51.0%*	*57.0%*

- In 2022, the percentage of individuals in whom histology or cytology was performed after referral was 74%. This is higher than in 2021, when this was the case for 70% of referred individuals.
- The positive predictive value, the probability that a person was correctly referred to the gynaecologist for further examinations, was 55% in 2022. This is higher than in previous years, which is probably due to changes in the referral schedule and inviting higher-risk groups (45-49, 55-59 and 65-69 years) (see context 1).
- In 2022, histology was performed in 72.9% of referred individuals. This is an increase compared to 2021, when histological examination was performed in 68.5% of referred persons with a similar reference period. This is related to the fact that, due to changes in the referral schedule (see context 1), fewer individuals with ASCUS and LSIL were referred in 2022.
- The positive predictive value of histology at colposcopy was 57.0% in 2022. This is an increase compared to previous years as well.

3 / **Incidence and mortality**

Figure 12 / **Incidence and mortality of cervical cancer in the Netherlands** by year (source: NCR (incidence rates) and CBS (mortality rates))

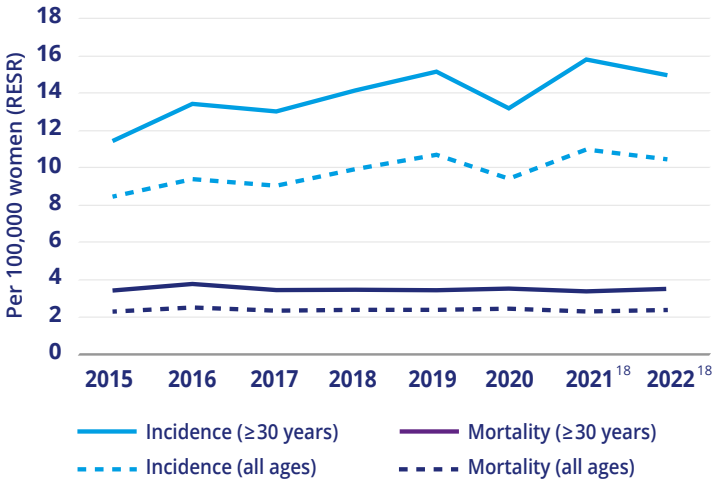


Table 11 / **Incidence and mortality of cervical cancer in the Netherlands** by year (source: NCR (incidence rates) and CBS (mortality rates))

	2015	2016	2017	2018	2019	2020	2021	2022[19]
Incidence / 100,000 women (≥ 30 jaar, RESR)	11.74	13.65	13.09	14.09	15.32	13.33	*15.87*	*15.00*
Squamous cell carcinoma	8.71	10.04	9.92	10.40	11.23	10.04	*11.61*	*11.32*
Adenocarcinoma	2.30	2.89	2.48	2.89	3.03	2.63	*3.44*	*2.76*
Other	0.73	0.72	0.69	0.81	1.06	0.65	*0.81*	*0.92*
Incidence / 100,000 women (all ages, RESR)	8.44	9.62	9.15	9.95	10.61	9.39	*10.97*	*10.26*
Squamous cell carcinoma	6.25	7.02	6.88	7.27	7.76	7.00	*7.97*	*7.78*
Adenocarcinoma	1.67	2.06	1.77	2.09	2.09	1.91	*2.43*	*1.87*
Other	0.52	0.55	0.49	0.59	0.76	0.48	*0.57*	*0.61*
Mortality / 100,000 women (≥ 30 jaar, RESR)	3.50	3.86	3.47	3.59	3.51	3.73	3.50	*3.58*
Mortality / 100,000 women (all ages, RESR)	2.39	2.60	2.32	2.42	2.38	2.53	2.34	*2.41*

- The trend of increasing incidence rates does not seem to continue in 2022. In addition, mortality rates appear stable as well.

Context

Context 2: **Data and monitoring**

The National Institute for Public Health and the Environment (RIVM) is responsible for the national coordination of screening programmes in the Netherlands on behalf of the Ministry of Health, Welfare and Sport. Monitoring of the screening programmes is carried out by the Erasmus University Medical Centre (Erasmus MC). The aim of this monitoring is to provide an overview of the screening programmes and identify important trends. This monitor shows results of individuals invited to participate in the cervical cancer screening programme in 2022.

The data displayed have been provided by Bevolkingsonderzoek Nederland (BVO NL) and the Pathological-Anatomical National Automated Archive (Palga). Data already published in previous monitors by the Netherlands Comprehensive Cancer Organisation (IKNL) are also displayed as indicated. Data on incidence and mortality is retrieved from the Netherlands Cancer Registry (NCR) and Statistics Netherlands (CBS), respectively.

Changes in data and calculations

Calculation participation rate

In previous monitors, the published participation rate was equal to the number of participants divided by the number of invitees. In this monitor, the number of individuals who were eligible for participation, but did not receive an invitation because they had permanently opted out during a previous round is added to the number of invitees. Those who have definitively opted out because of a hysterectomy are not included as they are not eligible to participate.

Calculation coverage rate

In previous years, the coverage rate was defined as the percentage of individuals at risk (i.e. with uterus) within the eligible screening age who were protected by having done at least one, hrHPV, histology or cytology test (within or outside screening programme) in the five years preceding the moment of measuring.

In the new calculation, individuals who have undergone hysterectomy are also considered protected. The coverage rate for 2022 is thus defined as the percentage of individuals registered in the Netherlands who were eligible for the screening programme in the past five years according to the invitation schedule or were not invited because of a previous HPV-negative test result (see context 1) and were protected by hysterectomy, participation in the screening programme or participation in a cytological or histological test outside the screening programme. Individuals who were not invited in 2022 because of an hrHPV-negative test during the previous round are hereby considered 'protected by participation in the screening programme'. For this particular group, it was in fact looked back ten years back from the reporting year instead of five.

For the other groups, data from a period of five consecutive years were analysed when calculating the coverage rate. The results of the reporting year are thereby based on the five-year period preceding that year. Since a new data source has been used since 2017, it was decided not to recalculate the coverage rate from previous years according to the new calculation.

Calculation positive predictive value screening

Previously, the positive protective value of screening was calculated by dividing the number of individuals with relevant findings (≥ CIN 2) by the number of referred individuals. For the indirect positive protective value, this was divided by the number of individuals to whom a control examination was advised. The new calculation shows the number of individuals with a relevant finding compared to all individuals who were referred and followed this referral advice.

Glossary

ASCUS: Atypical Squamous Cells of Undetermined Significance; term used in cervical cytology reporting.
BVO NL: Bevolkingsonderzoek Nederland; Dutch screening organisation.
CBS: Statistics Netherlands.
Control smear (CS): cytological follow-up examination for which individuals are invited to participate in 6 (before July 11, 2022) or 12 (from July 11, 2022) months after the primary test.
Colposcopy: procedure used to examine tissue of the cervix and/or vaginal wall.
Coverage rate: proportion of individuals from the target population who were protected from developing cervical cancer in the five years prior to measuring (see context 2).
Cytological test: examination cells obtained via a smear test.
Detection rate: proportion of participants who are histologically diagnosed with CIN 2, CIN 3 or a malignancy.
Histology: examination of tissue obtained during colposcopy.
HPV: human papillomavirus.
HPV genotyping: classification of HPV based on the genotype. For the screening programme, a distinction is made between HPV16/18 (the most carcinogenic types) and other hrHPV types (other HPV).
HSIL: High-grade Squamous Intraepithelial Lesions; term used in cervical cytology reporting.
hrHPV: high risk human papillomavirus.
Hysterectomy: uterine removal.
IKNL: Netherlands Comprehensive Cancer Organisation.
Insufficient quality: sample cannot be assessed.
LSIL: Low-grade Squamous Intraepithelial Lesions; term used in cervical cytology reporting.
NCR: Netherlands Cancer Registry.
Palga: Pathological-Anatomical National Automated Archive
Participation rate: proportion of individuals from the target population who participated in the screening programme in the reporting year in question.
Positive predictive value: percentage of participants in whom CIN 2+ was detected (histologically) compared to all referred participants.
Primary test: administration of the hrHPV test and, in the case of an hrHPV-positive result, cytology, in response to an invitation to the screening programme. An hrHPV test can be administered through a smear test at the GP or through a SSK.
Referral rate: proportion of participants who have been referred to the gynaecologist. Referral can occur as a result of the primary test (direct) or a control smear (indirect).
RESR: Revised European Standardised Rate; revised measure used to present incidence and mortality rates, standardized for the European standard population based on data on the European population in 2010.
Return to screening programme: no further follow-up examinations needed; advice to wait until the invitation for the next round of the screening programme.
SSK: self-sampling kit.

The screening programme and the monitoring thereof are carried out in collaboration with the following parties:
Bevolkingsonderzoek Nederland (BVO NL) — Dutch Association for Medical Microbiology (NVMM) — Dutch Association for Obstetrics and Gynaecology (NVOG) — Dutch Association for Pathology (NVVP) — Dutch Association of Medical Assistants (NVDA) — Dutch Society of General Practitioners (NHG) — Erasmus University Medical Centre (Erasmus MC) — Eurofins (NMDL and LCPL) — Jeroen Bosch Hospital — National Institute for Public Health and the Environment (RIVM) — Pathological-Anatomical National Automated Archive (Palga) — Radboud University Medical Center (Radboudumc) — Symbiant — University Medical Centre Groningen (UMCG)

Disclaimer: This monitor has been carefully compiled. Where possible, results for previous years have been recalculated using most recent data. They may therefore differ from previously reported results.

Eindnoten

1 The sum of the number of hrHPV-positive and negative tests does not equal to the total number of tests due to the presence of unassessable tests. Besides, the participation rate does not equal to the number of participants divided by the number of invitations sent (see context 2).

2 The presented data for indirect referrals are preliminary as not all invitations for the control smears have been sent out yet. In addition, the numerator of 'indirect referral' is not equal to the denominator of 'collection of body material' due to a source difference (BVO NL / Palga).

3 The number of colposcopies with performance of cytology or histology (by biopsy or smear test).

4 Individuals who have permanently opted out during a previous screening round for a reason other than a hysterectomy are in principle eligible for participation in the screening programme. Due to the opt-out, they did however not receive an invitation. This group is included in the calculation of the participation rate (see context 2).

5 See table 2 for written out percentages of the participation rates measured in the following year (reference period 15 months) and 2023 (most recent reference date).

6 For all findings, the reference date is 1 April 2023. Therefore, the reference period of 2021 (27 months) is 12 months longer than that of 2022 (15 months). For that reason, an additional column of 2021 with a reference period of 15 months is added for comparison. The numbers with a reference period of 15 months are preliminary and therefore printed in italics.

7 For all findings, the reference date is 1 April 2023. Therefore, the reference period of 2021 (27 months) is 12 months longer than that of 2022 (15 months). For that reason, an additional column of 2021 with a reference period of 15 months is added for comparison. The numbers with a reference period of 15 months are preliminary and therefore printed in italics.

8 Opportunistic, indicative and secondary smears.

9 For 2022, the coverage rate has been calculated following an updated calculation method, where individuals who have undergone hysterectomy are also included in the target population over which the coverage rate is calculated (see context 2).

10 For 2022, the coverage rate has been calculated following an updated calculation method, where individuals who have undergone hysterectomy are also included in the target population over which the coverage rate is calculated (see context 2).

11 Genotyping is known only for participants who participated after 11 July 2022 (see context 1).

12 From 11 July 2022, the term for the control smear has been extended from 6 to 12 months (see context 1).

13 For all findings, the reference date is 1 April 2023. Therefore, the reference period for each reporting year is 12 months longer than that of the following year. Results for 2022 are preliminary and are expected to turn out somewhat higher.

14 For all findings, the reference date is 1 April 2023. Therefore, the reference period for each reporting year is 12 months longer than that of the following year. Results for 2022 are preliminary and are expected to turn out somewhat higher.

15 For all findings, the reference date is 1 April 2023. Therefore, the reference period of 2021 (27 months) is 12 months longer than that of 2022 (15 months). For that reason, an additional column of 2021 with a reference period of 15 months is added for comparison. The numbers with a reference period of 15 months are preliminary and therefore printed in italics.

16 The number of colposcopies with performance of cytology or histology (by biopsy or smear test).

17 For all findings, the reference date is 1 April 2023. Therefore, the reference period of 2021 (27 months) is 12 months longer than that of 2022 (15 months). For that reason, an additional column of 2021 with a reference period of 15 months is added for comparison. The numbers with a reference period of 15 months are preliminary and therefore printed in italics.

18 Data for incidence (2021 and 2022) and mortality (2022) are preliminary.

19 Data for incidence (2021 and 2022) and mortality (2022) are preliminary. These numbers are therefore printed in italics.