THE CERVICAL CANCER SCREENING PROGRAMME IN FINLAND

CERVICAL CANCER SCREENING

ANNUAL REVIEW 2022

Participation in cervical cancer screening for 2020 remained at the same level as in previous years, at 70%. The coronavirus pandemic interrupted the cervical cancer screening programme in parts of Finland in 2020, but screening continued into 2021, and taking this into account there was no change from previous years. The majority of screening is already done using HPV testing instead of the Pap test that was previously used. Responsibility for screening will be transferred from municipalities to wellbeing services counties from the beginning of 2023.

SUMMARY

In 2020, about 276,000 women were invited to the cervical cancer screening programme, of whom around 193,000, or 70%, participated. 93% of those screened received a normal test result, 6% a recommendation for risk group screening and 1% a referral for further investigation. Follow-up screening identified 28 cases of cervical cancer and 883 serious precancerous lesions. Tests that detect the presence of human papillomavirus (HPV) accounted for 62% of all screening tests. Unlike in many other countries, the coronavirus pandemic had little impact on screening uptake in Finland. In some parts of the country, the screening programme was suspended from spring 2020, but screening continued until mid-2021, with the number of screening tests eventually reaching the same level as in previous years.

Finnish Cancer Registry

1. INTRODUCTION

Cervical cancer screening started in Finland in 1963 and expanded into a national programme in the early 1970s. The aim of screening is to reduce the incidence and mortality of cervical cancer by detecting cervical cancers and their precursors, which can be treated before they develop into cancer. Age-standardised incidence rates started to decline with screening in the 1970s and continued to fall until the 1990s, after which they have remained stable and mortality rates have continued to fall (Figure 1) Screening has thus been effective in Finland, reducing both incidence and mortality by about 80% (IARC 2005, Lönnberg et al. 2012, Pankakoski et al. 2022).

Despite its low level, the incidence of cervical cancer has increased since the 1990s among women under 40 years. At least part of this increase in incidence is related to the rise in HPV infections and increased smoking among young women (Anttila et al. 1999), which is a risk factor for cervical cancer. The HPV vaccination programme (THL 2022), which started in 2013, will reduce the incidence of cervical cancer in younger women in the coming years, as studies have shown its effectiveness in preventing both precancerous lesions and cancer (Lei et al. 2020).

For decades, the primary screening method for cervical cancer has been the Pap test, which aims to detect cellular changes in a gynaecological cytology sample. In the 2000s, the HPV test, which detects papillomavirus infection, has been used more widely in screening because it has been shown to be more sensitive in detecting cervical cancer precursors (Anttila et al. 2015). As of 2019, the HPV test has been used for the majority of screening and the Cervical Cancer Screening Expert Group recommends it as the primary test for screening women aged 30 years and over. For women under 30, the Pap test is still recommended because younger women are more likely to have self-healing HPV infections.

2. CERVICAL CANCER SCREENING IN FINLAND

THE SCREENING PROCESS

In 2020, women aged 30-60 were invited to the cervical cancer screening programme every five years, in accordance with the Government Decree on Screenings. Some municipalities also invited women aged 25 and/or 65 years. The screening test was free of charge for those invited. However, the patient fees for treatment and follow-up examinations in specialised medical care were determined by the hospital district.

The screening test is taken either at the health centre or at a screening laboratory. The pathology laboratory sent the women a response to the test result and, if necessary, made a referral for further investigations. Municipalities can decide independently whether to use the Pap test or the HPV test as a screening method.

Women with mild cellular changes (ASC-US, LSIL in women under 30 years of age) or HPV test positivity alone were recommended to be invited for risk group screening. Risk group screening was performed 12–24 months after the previous screening invitation. Those with more severe results were referred for cervical endoscopy, i.e. colposcopy and biopsy. Referral can also be made for a mild abnormality that had been repeated 2–3 times. Follow-up examinations, necessary surgical procedures and treatment of cervical cancer and its precursors are carried out in specialised medical care.

MAIN FINDINGS 2020

In 2020, the screening programme sent out a total of 276 372 invitations and 193 028 of the women invited participated in the screening (Table 1). The overall screening participation rate was 70%. There were 272 432 invitations to age group screening and 3 940 invitations for risk group screening.

Overall, 93% of those screened received a normal test result, 6% a recommendation for risk group screening and 1% a referral for further examination (Table 2). Histologically confirmed severe precancerous or cancerous lesions (HSIL+) were found in 0.5% of those screened.

The screening programme detected 28 cervical cancers and 883 severe precancers. These represent one-sixth of all cervical cancers diagnosed in Finland in 2020 and 40% of serious precancerous lesions.

In the target group of women aged 30–60 years, as defined in the screening regulation, a significantly higher proportion of HPV-tested women received a recommendation for risk group screening compared to those tested with Pap (7.0% vs. 2.8%). There was no significant difference between testing methods in the rates of follow-up referrals and subsequent pre-screening (1.0% vs 0.9%; 0.5% vs 0.4%) (Table 2).

COMPARISON WITH PREVIOUS YEARS

The coronavirus pandemic that began in 2020 also affected cervical cancer screening. The monthly number of screening tests in spring 2020 was lower than in previous years (Figure 2). However, the monthly number of screening visits rose to a higher level than the previous year during the rest of the year and screening of the 2020 target group was also extended well into 2021. In the end, screening participation remained at the same level as in previous years, around 70%. In the younger age groups (25–44 years), participation rates have increased somewhat in recent years, although they remain lower than for older women (Figure 3).

The number of people invited to risk group screening fell in 2020 compared to previous years. In 2020, 3 940 invitations to risk group screening were sent out, compared to around 16 000 per year in 2015-2019.The decrease is mainly explained by the Hospital District of Helsinki and Uusimaa, where, due to changes to the data system, invitations to risk group screening in 2020 were not sent out until 2021. In most of the hospital districts, the number of invitations to risk group screening decreased slightly compared to previous years.

The proportion of histologically confirmed precancers and cervical cancers has increased significantly since 2010, although there was a slight dip in the most recent year 2020 (Figure 4). The decline in diagnosis rates in 2020 is mainly explained by a decrease in high-risk screening, but also by shortcomings in the registration of follow-up data. From 2015 to 2019, 5% of those referred for further examination had no information on follow-up results or an inconclusive sample, compared to up to 12% of these results in 2020.

3. CERVICAL CANCER SCREENING BY REGION

HPV testing was the main screening test in the hospital districts of Helsinki and Uusimaa, Kanta-Häme, Central Finland, Pirkanmaa, North Karelia, Päijät-Häme and Satakunta. In Southwest Finland and South Ostrobothnia, HPV tests accounted for 46% and 38% respectively. In the other health districts, screening was performed by Pap test.

Participation in screening varied significantly by region. Age-standardised participation rates in 2016–2020 were highest in Åland (78%) and South Ostrobothnia (77%).

The largest hospital district in terms of population, Helsinki and Uusimaa, had a lower age-standardised participation rate (67%) than several other hospital districts, and the lowest age-standardised participation rate was 61% in North Savo (Table 3).

Participation rates also vary significantly between municipalities. In some municipalities, screening participation remained below 50% during 2016–2020, while in some municipalities screening participation exceeded 80% (Figure 5). In the largest cities, participation rates have remained slightly below the national average in recent years. The largest variation has been in rural municipalities, but the number of people screened in a given municipality in a given year can be as low as just a few.

The age-standardised proportion of people with a risk group recommendation varied between 1.7% and 10.0% by health district (Table 3). South Savo (10.0%) and Central Finland (7.4%) had the highest number of recommendations for risk group screening, while Kainuu and Länsi-Pohja had the lowest (both 1.7%).

The age-standardised proportion of those referred for follow-up examination varied between 0.6% and 1.1% (Table 3). The lowest rates were found in South Karelia and Itä-Savo, and the highest in Kanta-Häme, Kymenlaakso, Pirkanmaa and Southwest Finland. The age-standardised detection rates for follow-up studies varied between 0.2% and 0.6% and were highest in the Länsi-Pohja Hospital District.

4. CERVICAL CANCER SCREENING BY POPULATION GROUP

Participation rates and screening results in 2020 were analysed by native language, socioeconomic status and educational level in the 30–60-year age group. For mother tongue, a comparison was made between domestic and non-domestic language speakers. Domestic languages include Finnish, Swedish and Sami. Data on socio-economic status and education level were extracted as at the end of 2019. Socio-economic status was examined in eight categories. Education level was defined as primary, secondary or tertiary education based on the highest level of education attained.

LANGUAGE

Around 250 000 of the invitations were sent to native speakers of a domestic language and 27 000 to non-domestic language speakers. Age-standardised participation rates were higher in 2020 for domestic language speakers (71%) compared to non-domestic language speakers (56%). There was little difference in screening test results or follow-up findings between domestic and non-domestic language speakers (Table 4).

SOCIOECONOMIC STATUS

In 2020, participation rates were highest for white-collar workers (74–76%) and slightly lower for entrepreneurs (67%) and employees (68%). Age-standardised participation rates were clearly lowest among pensioners (51%) and people with unknown socio-economic background (48%) (Table 5). Age-standardised participation rates varied by socio-economic status between 0.8% and 1.2%.

EDUCATIONAL LEVEL

Participation in 2020 varied significantly by level of education. The age-standardised participation rate for tertiary graduates was as high as 75%, compared to only 50% for those with no more than primary education (Table 6).

Those with tertiary education received fewer referrals for follow-up (0.9%) than those with a lower educational level (1.2%), and also had fewer precancerous lesions than those with lower education (Table 6).

5. DETECTION MODE OF CERVICAL CANCER

About 170 cases of cervical cancer are diagnosed each year in Finland. The Finnish Cancer Registry has combined data from the Cervical Cancer Screening Register with data from the Cancer Registry, which shows that only about one sixth of all cancers are detected by the screening programme (Figure 6). Analysis by the Cancer Registry shows that between 2016 and 2020, around 3% of cancers were detected before the screening age, 73% in those of screening age and 24% in those above screening age. In the screening age group, 48% of cancers were detected in women who had not undergone screening in the 5.5 years prior to diagnosis and 22% of cancers were detected after a negative screening test. Only 29% of cancers at screening age were detected in the screening programme.

6. RESEARCH PROJECTS

The Cancer Registry has several ongoing research projects related to cervical cancer screening. The results of the various research projects published during 2022 are summarised below.

EFFECTIVENESS OF SCREENING AT DIFFERENT AGES IN AND OUTSIDE THE PROGRAMME

The Cancer Registry study *Effectiveness of Cervical Testing in and outside a Screening Program-A Case-Control Study* (Pankakoski et al. 2022) examined the preventive effect of Pap smear and HPV testing on cervical cancer. The data for the case-control study consisted of cervical cancers from 2010 to 2019 and testing in the three to five years prior to diagnosis. The tests were mainly Pap tests.

Testing was effective at both three- and five-year intervals. Testing both in the national screening programme and elsewhere in the health system prevented cancer. Testing was most effective from age 35 upwards. Some cancer-preventing effects were observed up to age 79. In contrast, no significant effects were found for testing under 30 years of age (Figure 7). Among cancer types, testing was most effective in preventing squamous cell carcinomas, but also to some extent adenocarcinomas.

Although testing both in and out of the programme prevents cancer, the screening programme should be favoured because it is cost-effective and can also be monitored and improved. Opportunistic testing is also heavily concentrated in the very young population where the effectiveness of screening is questionable. On the other hand, testing outside the programme is less frequent in those past the screening age where a protective effect would be observed.

COMPARISON OF HPV AND PAP TEST-BASED SCREENING

A research article on the impact of HPV testing on referral and detection rates for cervical cancer screening (Hakkila et al. 2022) found that the HPV test is significantly more sensitive in detecting precancerous lesions than the traditional Pap test. On the other hand, the increasing number of follow-up or risk group tests and follow-up examinations places a burden on health care as it is not possible to distinguish between precancerous and non-cancerous lesions.

Some municipalities have been using the HPV test as the primary screening test for several years. This study assessed the impact of the increased use of HPV testing on screening referral and detection rates. The results showed that women who participated in the 2012–2015 age group screening were slightly more than twice as likely to receive a colposcopy for HPV screening and 1.6 times as likely to have a

relative risk of pre-diagnosis. Colposcopy screening was particularly high in the high-risk group.

The number of HPV infections detected in the screening programme and the number of repeated positive results was high compared to the fact that just under 180 new cases of cervical cancer are detected each year. Therefore, further testing based solely on the longevity of HPV infection leads to a high rate of overdiagnosis. In the future, alternative methods of classifying positive HPV samples, such as genotyping, should be introduced.

ALTERNATIVE HPV-ALGORITHMS

The Cancer Registry study *Alternative cytology triage strategies for primary HPV screening* (Vahteristo et al. 2022) compared seven different cervical cancer screening algorithms, or protocols, according to which screening could proceed. The algorithms were generated retrospectively from the data. The algorithms mainly used a Pap test as a follow-up test after a positive HPV test and varied the criteria required for a colposcopy referral. One algorithm did not include a follow-up test at all, but referred directly to colposcopy based on a positive HPV test result. One algorithm was equivalent to traditional Pap test screening.

Compared to Pap test alone, HPV screening was better at detecting mild to moderate precancerous lesions. However, a large proportion of mild and moderate precancerous lesions improved spontaneously over time, so their detection did not necessarily improve the effectiveness of screening.

Of the algorithms tested, the sensitivity and accuracy of HPV screening were best balanced when there were two follow-up tests for HPV-positive people who had no cellular changes detected on Pap tests. However, even two follow-up tests yielded significantly more colposcopies compared to Pap testing. In order to balance the benefits and harms of screening, further improvements in HPV screening methods are needed.

CANCER INCIDENCE AND SCREENING UPTAKE AMONG WOMEN OF RUSSIAN ORIGIN

The incidence of cervical cancer and participation in cancer screening among women in Finland who were born in the former Soviet Union and Russia was investigated in *Health inequalities among Russian-born immigrant women in Finland: Longitudinal analysis on cervical cancer incidence and participation in screening* (Lamminmäki et al. 2022). The study included all women living in Finland between 1970 and 2017, Cancer Registry data from 1973 to 2017 and screening data from 1991 to 2017.

The incidence of cervical cancer among Russian-born immigrant women was clearly higher (+62%) than in the rest of the Finnish female population, and their participation in cervical cancer screening was slightly lower (-6%) than that of other women. Length of residence in Finland and age at immigration did not significantly affect women's risk of cervical cancer and participation in screening.

Russian-born women seem to have confidence in the Finnish screening system, as their participation in screening is only slightly lower than the rest of the female population. The higher incidence of cervical cancer found in the study cannot be explained by the lack of screening alone. Nevertheless, the higher incidence of cervical cancer among women born in the Soviet Union and Russia means that it is important to encourage the migrant population to participate more actively in screening.

7. RECOMMENDATIONS AND CONCLUSIONS

In 2020, the coronavirus pandemic caused short-term changes in the organisation of screening, with some municipalities suspending screening in the spring. However, screening was actively resumed in the autumn of the same year and some women continued to participate in screening in the following year, with screening participation eventually reaching levels similar to previous years. The changes caused by the coronavirus pandemic are unlikely to be limited to 2020, so the situation will need to be monitored closely in the coming years. The pressure on health care due to the pandemic and the lengthening of waiting lists will probably also be reflected in the operation of the screening programme, including by slowing down access to follow-up examinations.

Responsibility for organising screening will be transferred from municipalities to wellbeing services counties from the beginning of 2023. This is expected to facilitate national coordination of screening by reducing the number of responsible parties from around 300 municipalities to 21 wellbeing services counties and the City of Helsinki, which will continue to be responsible for the organisation of services. However, from the point of view of the wellbeing services counties, screening is a very small part of the overall social and health care system. It is therefore important to ensure that, from next year onwards, the counties follow best practice and expert recommendations in the implementation of screening.

Increasing participation rates is key to improving the effectiveness of screening. In particular, there is room for improvement in screening participation of people with lower levels of education and native speakers of non-domestic languages. Differences in screening participation between hospital districts have narrowed slightly and, for example, in North Savo, there has been a slight improvement in 2020 compared to previous years. Invitation practices play a major role in participation, and pre-announced sampling times and locations have been shown to improve participation (Virtanen et al. 2015).

A case-control study published by the Cancer Registry this year confirms the perception of the effectiveness of screening both in and out of the programme, especially for those aged 35 and over. Integrating tests outside the screening programme into the quality assessment of the screening programme is an important goal and could improve the cost-effectiveness of screening by reducing duplicative testing. A model could possibly be sought in other Nordic countries where screening invitations are only sent to those who have not been tested during the screening interval.

The Cancer Registry is also developing the registration of screening data by moving to a new data model that will harmonise the reporting of screening data nationally and allow for more real-time use of data. The aim is to utilise screening data more quickly by making the information available to wellbeing services counties and screening providers.

The screening programme will undergo several major changes in the coming years, including the replacement of the Pap test by the HPV test in the latter areas. In December, the Cervical Cancer Screening Expert Group under the National Cancer Screening Steering Group updated its recommendations on cervical cancer screening practices. The latest guidance, adopted on 14 December 2022, recommends that wellbeing services

counties switch to HPV screening as the primary screening method. Another significant change is that the HPV-vaccinated age groups reach the target age for screening.

Under the HPV vaccination programme that started in 2013, the first age groups to receive the vaccine will turn 25 next year and will be invited for screening in some parts of the country. The HPV vaccine given at school age is highly effective in protecting against cervical cancer and its precursors (Lei et al. 2020). It is therefore important to monitor the effectiveness of screening in the vaccinated population, and make changes to the screening programme as necessary to maintain a favourable balance of benefits and harms and to ensure that screening remains cost-effective. It is likely that screening intervals can be safely extended in the vaccinated population.

A quality manual is currently being prepared by the Cervical Cancer Screening Expert Group, which will provide comprehensive guidance on the different stages of screening. As part of the preparation of the quality manual, changes to the screening algorithm are also being considered to ensure the preventive efficacy of screening for cervical cancer while minimising overdiagnosis and the resulting unnecessary treatments. A quality manual for cervical cancer screening is expected to be finalised in 2023.

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LINKS AND PUBLICATIONS

FINNISH CANCER REGISTRY

cancerregistry.fi

INTERACTIVE SCREENING STATISTICS 1991–2020

cancerregistry.fi/statistics/screening-statistics/

CURRENT CARE GUIDELINES

Cell changes of the cervix, vagina and external reproductive organs (online). Working group of the Finnish Medical Society Duodecim and the Finnish Society for Colposcopy. Helsinki: Suomalainen Lääkäriseura Duodecim, 2021 (cited 29.11.2022). Online: www.kaypahoito.fi (in Finnish)

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TERMINOLOGY

AGE GROUP SCREENING
In age-group screening, municipalities invite women aged 30–60 to be screened every five years on the basis of age. Some municipalities also invite women aged 25 and/or 65 to screening (65-year-olds invited nationwide from 2022)

BIOPSY
Tissue removed from the living body

CANCER INCIDENCE
The number of new cancer cases per population at risk, or per person-time of the population at risk, during a given period.

COLPOSCOPY
Cervical endoscopy

HISTOLOGY SAMPLE
Tissue sample

HPV
Human Papilloma Virus

HPV TEST
An HPV test approved for screening detects high-risk HPV virus types from a gynaecological loose cell sample. Sampling is done in the same way as in the Pap test. If the HPV test is positive, a Pap test is also performed on the same sample.

MORTALITY
The number of deaths per population at risk, or per person-time of the population at risk, during a given period.

OPPORTUNISTIC TESTING
The testing of symptomless persons outside the organised screening programme (in private or public health care). Symptom-related testing and patient follow-up are also performed outside the screening programme.

OVERDIAGNOSIS
The detection of latent cancers or precancerous lesions that, if left untreated, would not have affect a person's health during their lifetime.

PAP TEST
Examination of a cytology sample.

RISK GROUP SCREENING
Invitation for risk group screening when an outcome in a previous examination requires follow-up every one or two years between age group screenings.

SCREENING COVERAGE
Proportion of target population invited to screening (call coverage) or share of screened target population (test coverage). Test coverage can also be assessed using the same calculation rules in activities outside the screening programme.

SCREENING RESULTS

ASC-US
Atypical squamous cells of undetermined significance.

AGC-NOS
Atypical glandular cells not otherwise specified.

LSIL
Low-grade squamous intraepithelial lesion.

HSIL
High-grade squamous intraepithelial lesion.

AIS
Adenocarcinoma in situ.

LSIL+
LSIL+ includes LSIL- and stronger changes (LSIL, HSIL, AIS, cancer)

HSIL+
HSIL + includes HSIL- and stronger changes (HSIL, AIS, cancer). Precursors of cervical cancer include histological HSIL and histological AIS.

LIST OF FIGURES AND TABLES

FIGURE 1: **Age-standardised incidence and mortality of cervical cancer in women in Finland 1953–2020.**

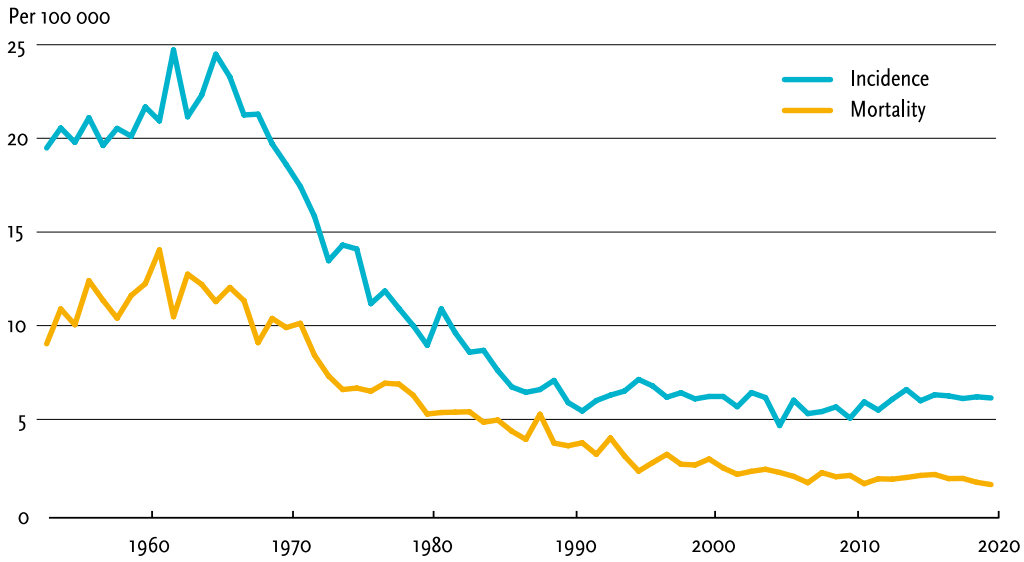

FIGURE 2: **Screening participation during invitation years 2019 and 2020. (bars represent monthly participation numbers and the lines represent cumulative participation).**

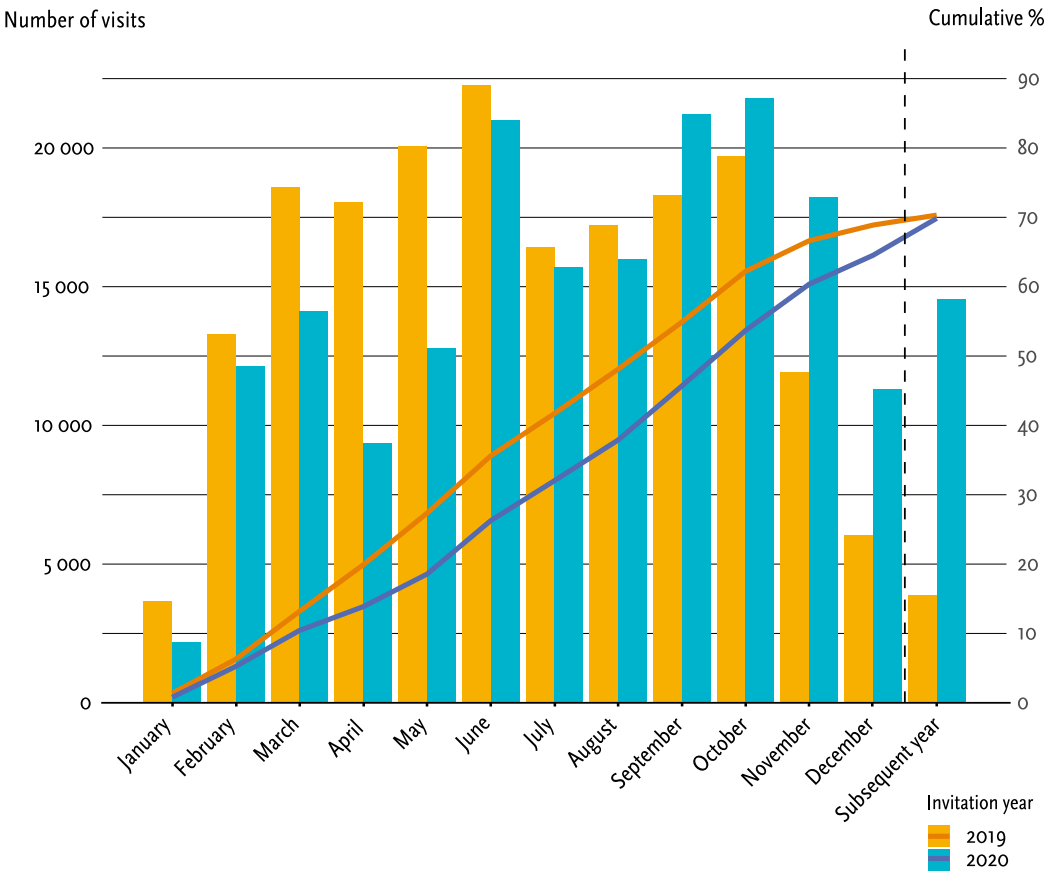

FIGURE 3: **Participation in cervical cancer screening (%) by age group 1991–2020, age group screening.**

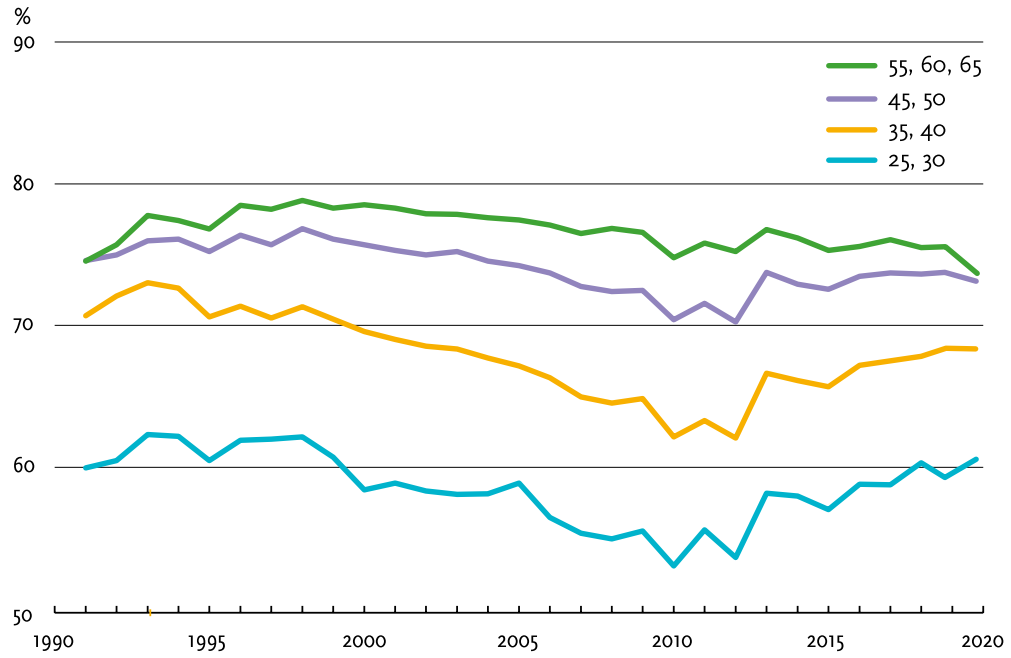

FIGURE 4: **Histologically confirmed HSIL or higher (%) in women aged 25–69 years 1991–2020.**

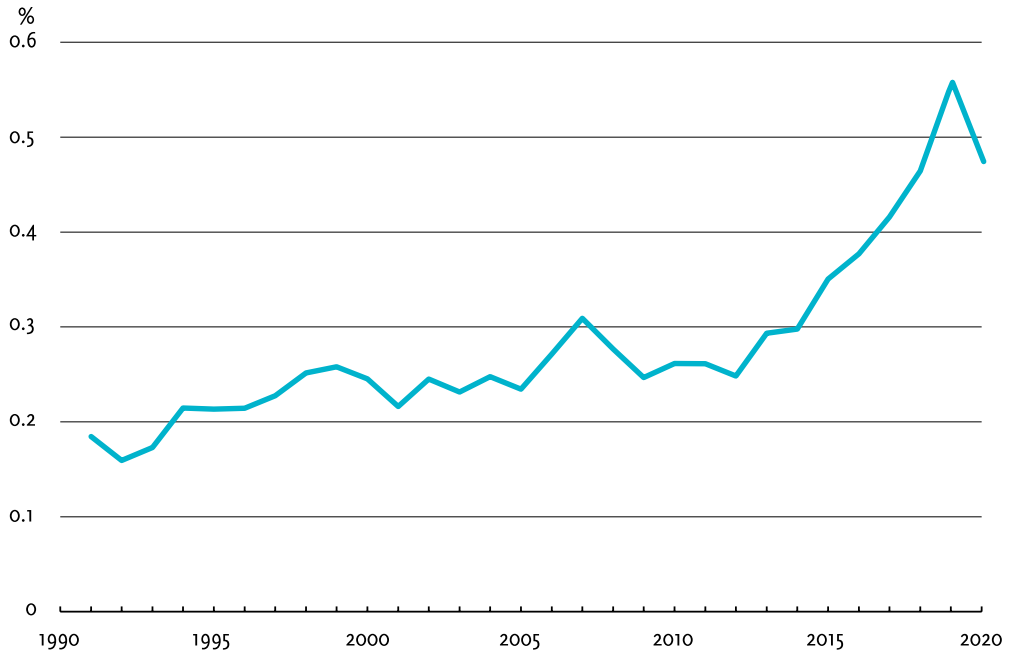

FIGURE 5: **Participation in cervical cancer screening by municipality.**

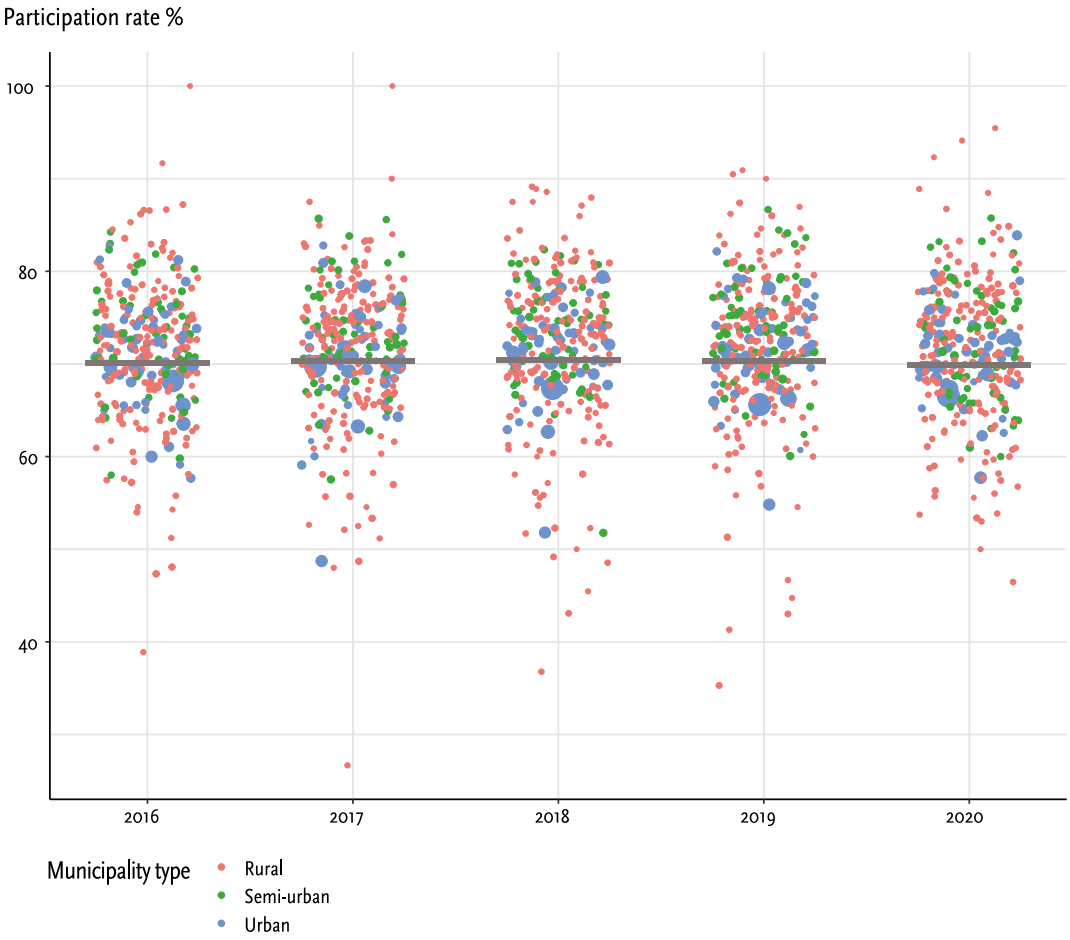

FIGURE 6: **Cervical cancer detection mode 2016–2020 (percentages separately for target age range of screening).**

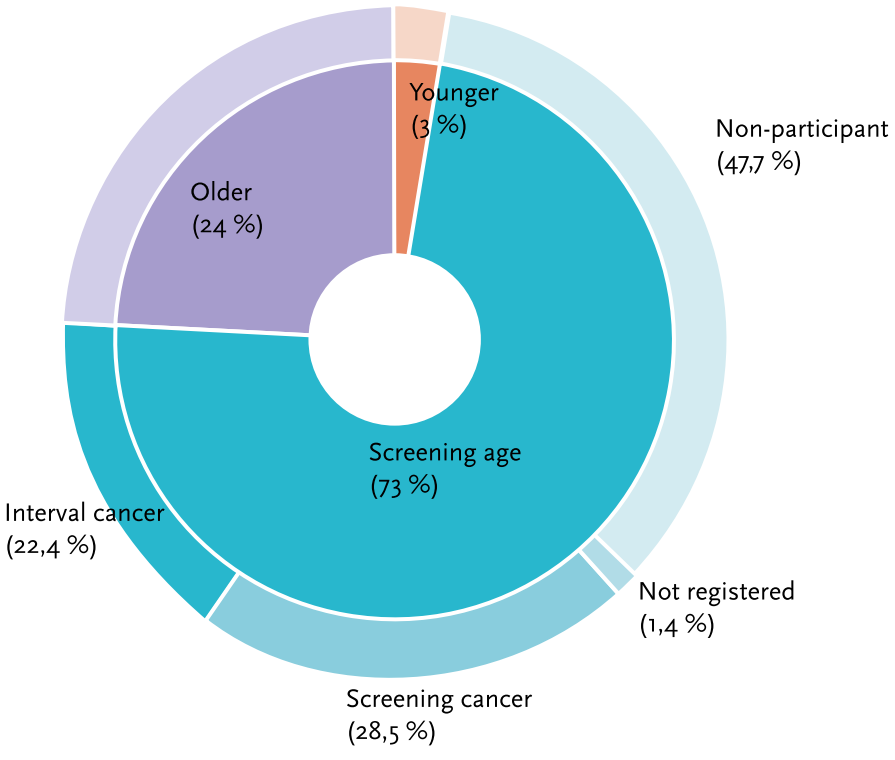

FIGURE 7: **Effectiveness of cervical cancer screening in and outside the screening programme by age group. Standardised for education, socioeconomic status and mother tongue.**

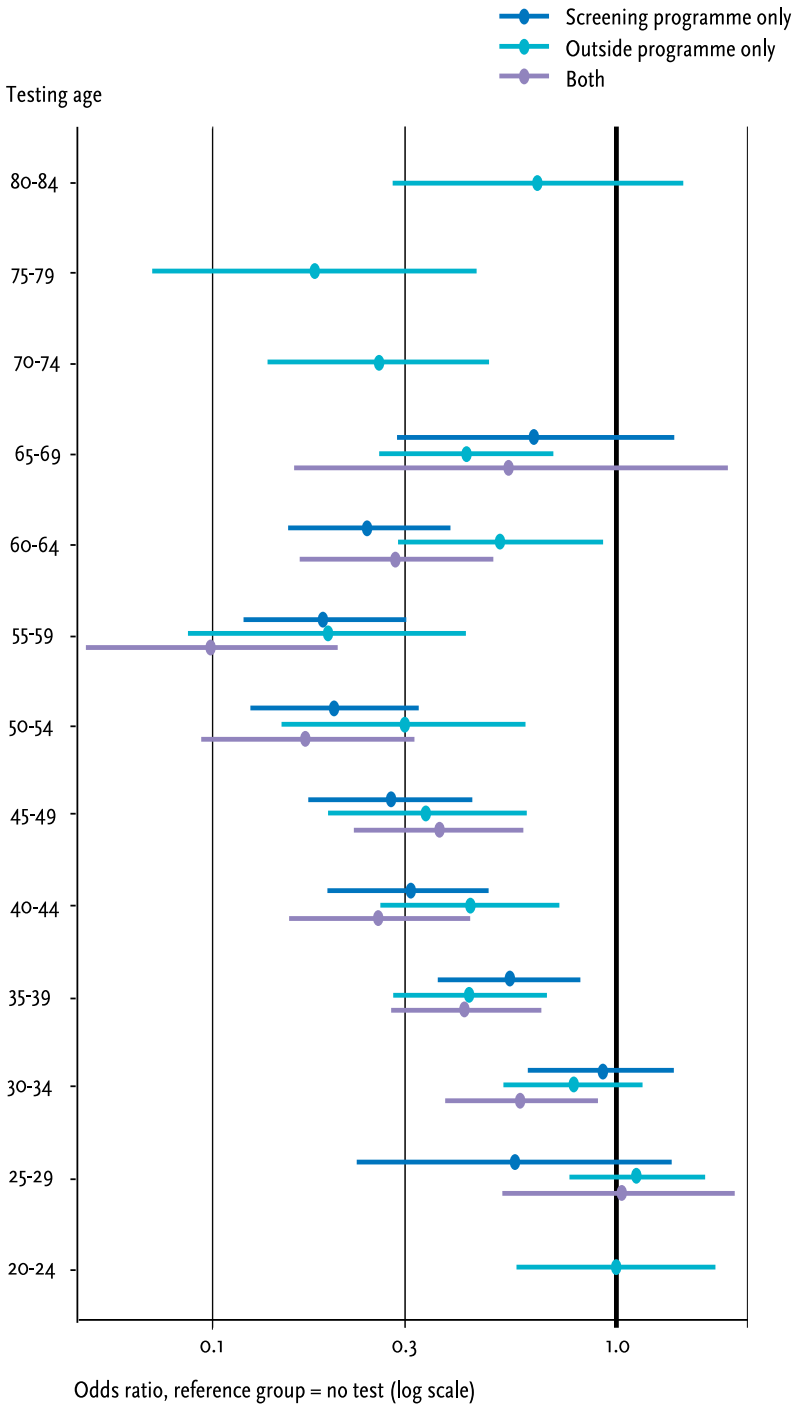

TABLE 1: Target population of cervical cancer screening and invited and screened women in 2020.

	Target population	Invited	Invited population (coverage)	Screened	Screened of invited
Age group screening: 30–60	242 081	241 931	100	170 898	71
Age group screening: 25–65	311 832	272 432	87	190 402	70
Screening by age and risk group: 25–69		276 372		193 028	70

TABLE 2: Screening results by test method (Pap, HPV, total) in 2020.

	Screened	Negative or normal		Recommendation for risk group screening**		Referral for follow-up examination**		Histological HSIL+		Not interpretable or data missing
	n*	n	%	n	%	n	%	n	%	n
PAP TEST										
Age group screening: 30–60	61 803	59 517	96.3	1 735	2.8	544	0.9	239	0.4	7
Screening by age and risk group: 25–69	73 867	70 563	95.5	2 602	3.5	694	0.9	309	0.4	8
HPV TEST										
Age group screening: 30–60	109 135	100 469	92.1	7 617	7.0	1 041	1.0	522	0.5	8
Screening by age and risk group: 30–69	119 204	109 671	92.0	8 147	6.8	1 376	1.2	602	0.5	10
TOTAL										
Age group screening: 30–60	170 938	159 986	93.6	9 352	5.5	1 585	0.9	761	0.5	15
Screening by age and risk group: 25–69	193 087	180 246	93.4	10 753	5.6	2 070	1.1	911	0.5	18

* The table may contain more than one result from the same person.

** Based on screening test result (result requires either risk group screening or referral).

TABLE 3: **Invitations and examinations and main findings in women aged 30–60 years in 2016–2020 by hospital district, age group invitations.**

Hospital District	Invited	Screened		Recommendation for risk group screening		Referral for follow-up examination		Histological HSIL+		Not interpretable or data missing
	n	n	%*	n	%*	n	%*	n	%*	n
Åland	6 721	5 229	78	99	1.9	44	0.8	16	0.4	
South Karelia	26 727	19 291	71	801	4.2	110	0.6	35	0.2	8
South Ostrobothnia	39 512	30 687	77	1 581	5.3	245	0.8	103	0.4	
South Savo	20 528	15 707	76	1 548	10.0	145	0.9	60	0.4	3
Helsinki and Uusimaa	399 745	276 481	67	14 280	5.1	2 337	0.8	998	0.4	1
Itä-Savo	7 937	6 104	76	329	5.5	35	0.6	14	0.3	1
Kainuu	14 865	11 002	73	185	1.7	68	0.7	33	0.3	
Kanta-Häme	36 911	25 375	68	1 448	6.1	256	1.1	99	0.4	9
Central Ostrobothnia	15 742	11 395	72	397	3.5	78	0.7	35	0.3	
Central Finland	52 253	37 015	71	2 678	7.4	343	1.0	127	0.4	11
Kymenlaakso	35 293	24 466	68	601	2.5	249	1.1	84	0.4	5
Lappi	24 870	17 966	72	592	3.4	123	0.7	51	0.3	
Länsi-Pohja	12 369	8 929	72	145	1.7	67	0.8	45	0.6	
Pirkanmaa	115 586	81 564	71	5 481	6.8	906	1.1	397	0.5	21
North Karelia	33 845	23 524	69	937	4.1	187	0.9	92	0.4	
North Ostrobothnia	84 160	60 650	72	1 193	2.0	424	0.7	179	0.3	1
North Savo	51 566	31 450	60	1 527	4.9	277	0.9	102	0.4	7
Päijät-Häme	44 524	31 312	70	1 083	3.7	289	1.0	141	0.5	1
Satakunta	45 375	32 356	71	1 653	5.3	306	1.0	156	0.5	7
Vaasa	34 317	25 848	75	1 014	3.9	170	0.7	71	0.3	1
Southwest Finland	104 904	78 666	75	3 301	4.2	863	1.1	409	0.5	3

* age standardised (Finland 2014)

TABLE 4: **Invitations and screenings and main findings by language in 2020.**

Mother tongue	Invited	Screened		Recommendation for risk group screening		Referral for follow-up examination		Histological HSIL+	
		n	%*	n	%*	n	%*	n	%*
Domestic	248 154	177 322	71	9 817	5.7	1 873	1.0	825	0.5
Other	26 897	14 926	56	872	5.7	176	1.1	77	0.4

* age standardised (Finland 2014)

TABLE 5: **Invitations and screenings and main findings by socio-economic status in 2020.**

Social-economic status	Invited	Screened		Recommendation for risk group screening		Referral for follow-up examination		Histological HSIL+	
	n	n	%*	n	%*	n	%*	n	%*
Entrepreneurs	16 511	11 470	67	645	6.0	140	1.2	73	0.6
Lower level white collar	105 242	78 226	74	4 500	5.9	849	1.0	380	0.4
Upper level white collar	54 723	41 955	76	2 124	5.3	353	0.8	133	0.3
Workers	35 836	24 272	68	1 470	6.1	326	1.2	159	0.6
Students	11 256	6 626	64	451	5.2	81	1.0	40	0.5
Retired	23 294	14 326	51	555	5.2	114	1.0	35	0.4
Unemployed	18 824	11 099	58	616	5.6	147	1.2	64	0.5
Other / data lacking	10 686	5 054	48	379	6.6	51	0.9	24	0.4

* age standardised (Finland 2014)

TABLE 6: **Invitations and screenings and main findings by level of education in 2020.**

Educational level	Invited	Screened		Recommendation for risk group screening		Referral for follow-up examination		Histological HSIL+	
	n	n	%*	n	%*	n	%*	n	%*
Primary or data lacking	31 028	15 407	50	894	6.1	182	1.2	88	0.6
Secondary	111 664	76 504	68	4 615	6.1	961	1.2	462	0.6
Higher	133 680	101 117	75	5 231	5.3	918	0.9	358	0.3

* age standardised (Finland 2014)