The vaccination coverage of the different risk groups (being a chronic obstructive pulmonary disease (COPD) patient, an asthma patient, a heart patient or a diabetes patient and being 65 years or older) in '95-'96 is shown in Table 22.

Table 22 Influenza vaccination differentiated for age- and risk groups in '95-'96 (national sample)

COPD (incl. asthma),heart or diabetes patient						non (COPD-, asthma-, heart,- and diabetes) patient					
<65 years			≥65 years			<65 years			≥65 years		
national sample											
n total	n	mean (range)	n total	n	mean (range)	n total	n	mean (range)	n total	n	mean (range)
557[1]	177	32.3 (4.1-79.6)	259[2]	180	67.3 (0.0-100.0)	6298[3]	188	3.2 (0.0-8.6)	896[4]	331	37.1 (11.0-71.7)
low immunisation coverage sample											
99	32	34.5 (7.7-54.8)	44[5]	31	67.1 (36.8-100.0)	1228[6]	41	3.1 (1.8-6.3)	176[7]	66	37.6 (17.2-37.6)

1 <571 because of missing values
2 <269 because of missing values
3 <6412 because of missing values
4 <920 because of missing values
5 <45 because of missing values
6 <1241 because of missing values
7 <179 because of missing values

The numbers on vaccination coverage collected by Dutch Influenza Foundation (18) were 50% for the medically defined risk group under 65, 83% for the medically defined risk group over 64, 6% for the medically defined non-risk group under 65 and 58% for the medically defined non-risk group over 64.

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3.4.4 Hepatitis A

Participants of the Pienter project were asked whether they had ever been immunised against hepatitis A and if so, they were asked if this had happened with passive immunisation (gammaglobulines) or/and with active immunisation (vaccine). Active vaccination against hepatitis A has been available since the autumn of 1992, passive immunisation with gammaglobulines already for decades.
From Table 23 it can be seen that more individuals reported to be immunised in the national sample than in the low immunisation coverage sample and that most individuals said to have received passive immunisation.

Table 23 Immunisation against Hepatitis A

	national sample			low immunisation coverage sample		
	n	mean	range	n	mean	range
	8259[1]			1572[2]		
yes	564	8.7	2.4-24.7	60	4.3	1.7-7.3
gammaglobulines	*391*	*74.6*	*33.9-100.0*	*44*	*88.3*	*77.5-100.0*
vaccination	*39*	*8.6*	*0.0-38.8*	*1*	*1.9*	*0.0-14.9*
both	*24*	*4.7*	*0.0-42.3*	*3*	*4.9*	*0.0-16.0*
don't know	*52*	*12.1*	*0.0-61.0*	*4*	*5.0*	*0.0-14.4*
no	6711	77.6	50.1-89.7	1388	87.3	82.3-94.3
don't know	984	13.8	6.6-25.5	124	8.4	2.4-13.1

1 <8345 because of missing values
2 <1589 because of missing values

3.4.5 Hepatitis B

Active immunisation for hepatitis B has been available in the Netherlands since 1982 with plasma-vaccine and since 1987 with recombinant vaccine. Passive immunisation has been available for many years.
In Table 24 can be seen that only a small percentage of the Dutch population has ever been immunised against hepatitis B.

Table 24 Immunisation against Hepatitis B

	national sample			low immunisation coverage sample		
	n	%	range	n	%	range
	5369[1]			1053[2]		
yes	180	3.7	0.5-13.2	29	2.8	1.6-3.9
	177			27		
<12 month ago	*31*	*19.1*	*0.0-100.0*	*3*	*10.2*	*0.0-47.7*
1 to 5 years ago	*60*	*37.3*	*0.0-100.0*	*9*	*28.4*	*0.0-90.2*
5 to 10 years ago	*38*	*19.1*	*0.0-100.0*	*5*	*32.5*	*0.0-100.0*
10 to 15 years ago	*12*	*5.4*	*0.0-100.0*	*2*	*8.2*	*0.0-40.8*
15 to 20 years ago	*4*	*1.5*	*0.0-21.8*	*3*	*7.0*	*0.0-32.0*
>20 years ago	*24*	*13.3*	*0.0-100.0*	*4*	*10.8*	*0.0-31.4*
don't know	*8*	*4.4*	*0.0-50.0*	*1*	*2.9*	*0.0-22.9*
no	4172	77.4	61.2-85.7	898	85.0	79.6-90.4
don't know	1017	18.9	11.3-31.2	126	12.2	6.5-16.5

1 <5493 because of missing values
2 <1076 because of missing values

3.4.6 Tropical immunisation certifates

In total 272 (3.8%) persons of the national sample brought a tropical immunisation booklet and 94 (23.4%) persons of the 435 who said to have visited a subtropical country (Middle East, Asia, Central America, South America, Middle South Africa or Northern Africa) did so. In the low immunisation coverage sample 25 (1.6%) person in total brought a tropical booklet and 12 (19.9%) of the 64 persons who reported to have visited a subtropical country did so.

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3.5 Self-perception on health

Participants were asked what their own opinion was on their health in general. One can see that there is no difference in health perception between the general Dutch population and the individuals from the low immunisation coverage municipalities and that over 4 out of 5 persons say their health is good or very good.
The CBS (15) did not include the option 'don't know' but because of the small number of individuals who filled in this option the numbers from the CBS and the Pienter project can be compared. The CBS found that 23.7% of the Dutch population felt their own health was very good, 57.5% thought it was good, 12.0% thought it was fair, 4.7% said it was sometimes good and sometimes bad and 2.1% said their health was bad. These numbers are approximately equal with the numbers of the Pienter project except for the fact that less participants of the Pienter project say their health is bad.

Table 25 Opinion on own health in general

	national sample			low immunisation coverage sample		
	n	mean	range	n	mean	range
	8301[1]			1581[2]		
very good	2344	25.6	18.8-34.7	433	25.5	17.4-31.3
good	4526	56.4	47.3-65.1	873	58.0	51.7-64.0
fair	930	11.8	5.1-18.1	178	10.6	8.7-13.3
sometimes good and sometimes bad	445	5.5	2.0-10.0	88	5.4	2.3-10.7
bad	38	0.5	0.0-3.4	5	0.3	0.0-0.7
don't know	18	0.3	0.0-3.0	4	0.2	0.0-0.5

1 <8345 because of missing values
2 <1589 because of missing values

The CBS also studied the prevalence of certain chronic diseases and found that 2.8% of the Dutch population suffered of rheumatism, 7.4% had a chronic obstructive pulmonary disease (including asthma) and 2.0% of the Dutch population was a diabetes patient. Chronic obstructive pulmonary disease (COPD) contains the same pulmonary diseases as the Dutch term CARA (chronische aspecifieke respiratoire aandoeningen) with the exception of asthma. In the national sample of the Pienter project, 2.8% of the participants reported to have rheumatism, 7.2% reported to have COPD (including asthma) and 1.4% reported to have diabetes.

4. DISCUSSION

The serumbank

A serumbank of 9948 samples has been established; 8359 samples were from the national sample and 1589 from the low immunisation coverage sample. All Public Health Services co-operated very enthusiastic and all municipalities gave permission for drawing a sample from the population register. The response (questionnaire ánd blood) was 55% (n=8345) in the national sample and 53% (n=1589) in the low immunisation coverage sample. This serumbank can facilitate many sero-epidemiological studies. In the pilot of the Pienter project the response was 40% (10). The response per municipality ranged from 35% to 70% in the national sample. The increase in response can probably be subscribed to the adjustments made in the approach of the participants on the basis of findings in the pilot (9, 10, 11, 13).
The sera are being analysed for antibodies of the diseases against which is vaccinated in the National Immunisation Programme. At the end of 1997 the seroprevalence data for diphtheria, tetanus and poliomyelitis and in 1998 the serological results for pertussis, mumps, measles, rubella are expected to be available.
A procedure has been set up for the release of the sera for further research. Proposals have to be submitted at the project leader. Research proposals will be evaluated on the significance for public health and on the scientific quality by a team of experts.

Evaluation of the questionnaire

Most of the questionnaires were filled in by the invited persons themselves or the parents /caretakers in case the child was too young. A review on the use of information from proxy's show that proxy's answer less questions than respondents and often underreport on exposition (19). In the case of young children being participants it seems logical though that parents or caretakers will give more reliable answers than the children.
Six percent of the participants found one or more questions not clear, this is importantly less than in the pilot-study when 19% did not completely understand one or more questions (11). The question on chronic diseases did not yield many missing values in contrast with the pilot-study where 36% had not completely filled in the question(11). So the adjustments made did pay off.
Questions on (necessity of) immunisations caused most problems: participants reported most often that these questions were not clear to them, answered 'don't know' or did not answer the question at all. In the pilot of the Pienter project these questions also turned out to be difficult to answer (11). In studying the relation between seroprevalence data and vaccination status this

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has to be taken into account. It has to be mentioned that for a large part of the participants information on vaccination status from the NIP certificates was available. So for this part reliable information on vaccination status is available.

Demographic information

In the Pienter project there were more female than male (45.8%) participants. Especially in the 'young adult' age groups (20-39 years) men were underrepresented (figure 1). The CBS reported that 49.5% of the Dutch population is male. This CBS number is based on the entire Dutch population while in the Pienter project only individuals aged 0-79 years were invited. As the life expectancy for women is higher than for men, the figures reported by the CBS slightly underestimate the underrepresentation of men in the Pienter project. In the pilot of the Pienter project the participation rate for men (48%) was also lower than for females (10). The underrepresentation of men agrees with former done research on the difference in response between men and women (20). A possible explanation could be that in general men have jobs more than women.

The response in the group of 0-4 years was higher than expected a priori (25%) on the basis of response rates in the pilot of the Pienter project (10). Also, the percentage partial respondents (only questionnaire) was highest in this group, probably because parents did not want to expose their children to the blood sampling although they were interested in the study.

Comparing the distribution of the 15-64 year-old group of the Pienter project for SES with the numbers collected by the CBS, persons with a low SES (48.5%) were overrepresented in the Pienter project and persons with a middle SES underrepresented. In the pilot of the Pienter project though, a lower response was seen in the low SES group (10).

The participants of the national sample are comparable with the Dutch population for marital status based on the figures of the CBS. The widowed and divorced participants of the Pienter project are a little underrepresented in favour of the married participants but the differences are not very large.

Participants with the Turkish nationality were underrepresented but participants with the Moroccan nationality were not. Individuals with a Turkish or Moroccan nationality received a translated invitation letter. During the consultation hours a Turkish and Moroccan speaking nurse was present. This extra attention for allochtonous groups and for Moroccan and Turkish individuals specifically still seems to have helped since there were no Turkish participants at all in the pilot-study (10). Persons not born in the Netherlands are also somewhat underrepresented.

It seems that the participants of the Pienter project are more or less representative for religion as the proportional distribution for religion was in accordance with the figures reported by the CBS. However, the CBS did not report separate figures for those religions which are know to refuse vaccination.

In summary female participants, participants with a low SES, participants with the Dutch nationality and participants born in the Netherlands seemed to be overrepresented in the Pienter project in comparison with figures from the CBS.
The information of non-participants in the Pienter project ((non-response) questionnaire and/or population register) offer the opportunity to study possible under and overrepresentation of specific groups and to correct the measured seroprevalence by possible selective non-participation.

Participation to National Immunisation Programme & necessity of vaccination in relation to religion

Individuals who belong to the orthodox reformed in general refuse vaccinations on religious grounds while a quarter of the individuals belonging to the reformed bond do so (16).
Orthodox reformed participants reported least to have participated in the National Immunisation Programme, both in the national sample (67.0%) and in the low immunisation coverage sample (34.6%). There is no real difference in the reported participation in the NIP for persons with no religion or a religion not opposed to immunisations between the national sample (95.1%) and the low immunisation coverage sample (93.2%). Participants belonging to the reformed bond (94.6%) and no or an other religion reported to have participated approximately equal in the NIP in the national sample. In the low immunisation coverage sample though the participants of the reformed bond reported to have participated less (85.1%) in comparison with participants with no or an other religion.
Twenty-four (24.5%) persons in the national sample reported that they had not participated in the NIP as a child but did bring a vaccination certificate and 14 (21.4%) persons who reported they did not know if they had participated in the NIP as a child did bring a vaccination certificate. In the low immunisaton coverage sample these numbers were 13 (11.5%) and 2 (20.2%). A possible explanation was that those persons had received only a tetanus or diphtheria vaccination for instance which was written down in the vaccination book but this turned out to be not true for most of these individuals: most persons had received more DTP or DTP(IPV) vaccinations. In the pilot study of the Pienter project the self-reported vaccination status also did not seem reliable (11).

For the opinion on the necessity of the different immunisations in the NIP almost the same trend is visible: a smaller percentage of persons belonging to the orthodox reformed in the low immunisation coverage sample considered the vaccinations necessary (this ranged from 29.2%-47.1% for the different immunisations) than the same religious group in the national sample (range 54.6%-65.8%). Also a relative large percentage of the participants belonging to the orthodox reformed reported they did not know whether they considered the different

immunisations necessary or not (range 10.2%-24.6% in the national sample and 11.7%-19.4% in the low immunisation coverage sample).
In the national sample more persons of the reformed bond considered vaccinations necessary (range 88.0%-99.7%) than in the low immunisation coverage sample (range 73.3%-93.4%). It seems thus that the quarter of the reformed bond that is opposed against immunisation is mainly clustered in the low immunisation coverage municipalities.
However, a slightly higher mean percentage of persons of no or an other religion in the low immunisation coverage sample considers the vaccinations against various childhood diseases necessary (range 86.4%-97.3%) than in the national sample (range 80.2%-96.4%). The differences vary from only 0.7% to 5.7%. A possible but not very plausible explanation is that persons in a low immunisation coverage sample know that they are at a higher risk of getting infected because their is no herd immunity in their municipality. It will be interesting to study whether the differences in (opinion on) immunisation found between the various religious groups and between the national sample and the low immunisation coverage sample is also related to the seroprevalence in the different subgroups for diseases for which vaccination is available.
In general individuals found immunisation against poliomyelitis most important (range 44.8%-99.7% for the different religious groups). Participants considered immunisations against tetanus, pertussis, diphtheria and *Haemophilus influenzae* type b approximately equally important (range 35.0%-98.3%). Considered least important was the MMR immunisation where rubella was considered most important (range 33.8-93.2%) and measles least important (range 29.2%-88.0%).

There is a relative large proportion of children born before 1 April 1993 vaccinated against Hib. A possible explanation is that parents had their children who were born before 1 April 1993 also immunised after they had seen that the younger siblings did get immunised automatically. Some PHS's offered Hib vaccinations to older children as well.

Other vaccinations

Over 60% of the participants reported they have ever got a vaccination against DTP. It is possible that participants were mistaken with DTP-IPV, given in childhood in the NIP. However, most participants reported that they were 5-15 years old when they received their last DTP-vaccination while DT(P)-IPV is given before the age of one and at the age of four years.

The immunisation degree of the participants of the Pienter project for influenza increased about two percent in both samples from '93-'94 to '95-'96. This is probably the influence of the campaign which the Dutch Influenza Foundation has held the last years. The Dutch Influenza Foundation (Nederlandse Influenza Stichting) led the fifth and last campaign in the season '95-

'96 with the goal of increasing the vaccination coverage of persons with an increased risk of getting complications because of influenza. This are persons with COPD (including asthma), heart and diabetes patients and since the '95-'96 season, persons of 65 years or older (18).
In the national sample the percentage that got an vaccination against influenza for a medical reason increased from '93-'94 to '94-'95 but remained stable then while there was no such trend at all in the low immunisation coverage sample. The percentage that got a shot for age-related reasons had not risen in '95-'96 in the Pienter project despite the campaign.
The Dutch Influenza Foundation has determined the vaccination coverage of the different risk groups by means of an survey of 1000 persons by an independent bureau (18). The coverages found are consistently higher than the numbers collected in the Pienter project. A possible explanation for the lower coverages found in the Pienter project is that participants with mild allergy or e.g. high bloodpressure filled in to be a COPD or heart patient while they were not according to medical standards. This could have resulted in an overestimation of the number of individuals in the 'risk' group and underestimation of the vaccination coverage.

At the evaluation of the questionnaire the difficulties participants had with the questions on immunisation were discussed. As an illustration: over ten percent of the participants in the national sample did not know whether they had ever been immunised against hepatitis A (13.8%) or against hepatitis B (18.9%). In the low immunisation coverage municipalities less participants did not know this (8.4% and 12.2%).
A relative large percentage of the participants that reported to have been immunised against hepatitis A did not know whether they were immunised passively or actively as appears from the 12% who filled in they didn't know and the 25% missings.
As already mentioned above this has to be taken into account in studying the relationship between vaccination status and seroprevalence data.

Self-perception on health

The reported self-perception on health of the participants of the Pienter project were approximately comparable with the figures reported by the CBS (15) on the general Dutch population. Only persons who considered their health to be bad seemed to be underrepresented (0.5% vs. 2.1%) but this is a relative small group. The prevalence of COPD (including asthma) and rheumatism was comparable with figures reported by the CBS on the Dutch population, only persons with diabetes were underrepresented. However, it has to be mentioned that the representivity of the figures gathered by the CBS has not been established because no non-response survey was done.
As mentioned above the data on non-participants in the Pienter project offer the opportunity to correct seroprevalence by possible selective non-participation.

5. CONCLUSIONS

- A serumbank with 9948 samples has been established (8359 samples from the national sample and 1589 from the low immunisation coverage sample) which will facilitate many sero-epidemiological studies with the main aim to evaluate the National Immunisation Programme.
- Some groups of participants (female participants, participants with a low SES, participants with the Dutch nationality and participants born in the Netherlands) seemed to be overrepresented in the Pienter project in comparison with figures from the CBS. This can be studied in more detail in the non-response study. The information on non-participants offers the opportunity to correct for possible selective non-participation.
- The participants of the Pienter project seemed to be approximately representative for the general Dutch population for marital status, religion and health compared with figures from the CBS.
- Participants thought immunisation against poliomyelitis was most important, then diphtheria, tetanus, pertussis and hib and immunisation against rubella, mumps and measles was considered least important.
- Participants belonging to the orthodox reformed thought the different immunisations from the National Immunisation Programme (NIP) were less important in comparison with participants of the reformed bond and participants with no religion or a religion not opposed to vaccination and participated less in the NIP.
- Participants of the reformed bond and of the orthodox reformed in the national sample participated more in the NIP and thought immunisations from the NIP were more important though than those participants in the low immunisation coverage sample. It will be interesting to study if the differences in (opinion on) immunisation found between the various religious groups and between the low immunisation coverage sample and national sample are also related to the seroprevalences for diseases for which vaccination is available in the different subgroups.

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Appendix I

Table A1. The municipalities and Public Health Services that participated in the Pienter project, in chronological order.

Municipality	Public Health Service, place	Contact person at the Public Health Service
Utrecht	Utrecht in Utrecht	Mr. van Kessel
IJsselstein	West Utrecht in Nieuwegein	Mrs. Hylkema
Rhenen*	Zuid Oost Utrecht in Zeist	Mrs. van Dam
Arnhem	Dienst Welzijn en Volks-gezondheid regio Arnhem in Arnhem	Mrs. Waegemaekers
Elst	Dienst Welzijn en Volks-gezondheid regio Arnhem in Arnhem	Mrs. Waegemaekers
Zevenaar	Dienst Welzijn en Volks-gezondheid regio Arnhem in Arnhem	Mrs. Waegemaekers
Kesteren*	Rivierenland in Tiel	Mr. Woldman
Lochem	Midden IJssel in Deventer	Mr. Götz
Apeldoorn	Oost Veluwe in Apeldoorn	Mrs. Keja
Elburg	Noordwest Veluwe in Harderwijk	Mr. Kraayenveld
Nunspeet*	Noordwest Veluwe in Harderwijk	Mr. Kraayenveld
Mook en Middelaar	Regio Nijmegen in Nijmegen	Mr. Huisman
Roosendaal	Streekgewest Westelijk Noord-Brabant in Bergen op Zoom	Mr. van Dijk
Aalburg*	Stadsgewest Breda in Breda	Mrs. Lodder
Beek en Donk	Gewestelijke Gezondheidsdienst Helmond in Helmond	Mr. van de Vorst
Tilburg	Midden Brabant in Tilburg	Mr. van den Bosch
Valkenswaard	Regio Geldrop-Valkenswaard in Valkenswaard	Mr. Kuijpens
Westkapelle	Zeeland in Goes	Mr. Flipse
Reimerswaal*	Zeeland in Goes	Mr. Flipse
St. Philipsland*	Zeeland in Goes	Mr. Flipse
Tholen*	Zeeland in Goes	Mr. Flipse
Duiveland*	Zeeland in Goes	Mr. Flipse
Ouder-Amstel	Amstelland-de Meerlanden in Amstelveen	Mrs. de Boer
Amsterdam	Amsterdam in Amsterdam	Mrs Leentvaar-Kuypers
Weesp	Gooi en Vechtstreek in Bussum	Mrs. Sleven
Drechterland	Westfriesland in Hoorn	Mr. Slijkerman
Beverwijk	Midden Kennemerland in Heemskerk	Mr. van Vliet
Castricum	Midden Kennemerland in Heemskerk	Mr. van Vliet
Texel	Kop van Noord Holland in Den Helder	Mr. Lie
Akersloot	Noord Kennemerland in Alkmaar	Mr. Willemsen
Maastricht	Zuidelijk Limburg in Maastricht	Mrs. Alink
Beek	Westelijke Mijnstreek in Geleen	Mr. Bovens
Grubbenvorst	Noord Limburg in Venlo	Mr. Jacobs
Groningen	Stad en Ommelanden in Groningen	Mrs. Luinstra
Zuidhorn	Stad en Ommelanden in Groningen	Mrs. Luinstra
Reiderland	Oost Groningen in Veendam	Mr. Niessen
Eelde	Noord en Midden Drenthe in Assen	Mr. Bruinsma
Emmen	Zuid Oost Drenthe in Emmen	Mr. Loer
Dwingeloo	Zuidwest Drenthe in Hoogeveen	Mrs. Gelderman
Den Ham	Gemeentekring Almelo in Almelo	Mrs. Schuurman
Hellendoorn	Gemeentekring Almelo in Almelo	Mrs. Schuurman
Rijswijk	Delft/Westland/Oostland/Rijswijk in Rijswijk	Mr. van Velthoven
Leerdam	Regio Dordrecht in Dordrecht	Mr. van de Kerkhof
Rotterdam	Rotterdam c.o. in Rotterdam	Mr. Bosman
Barendrecht	Rotterdam c.o. in Rotterdam	Mr. Bosman
Spijkenisse	Zuidhollandse Eilanden in Spijkenisse	Mr. Liefhebber
Oostflakkee	Zuidhollandse Eilanden in Spijkenisse	Mr. Liefhebber
Wassenaar	West Holland in Voorburg	Mr. Yap

* low immunisation coverage municipalities

Appendix II

Table B1. General features of the participants

			national sample			low immunisation coverage sample		
variable	age		n	mean	range	n	mean	range
number of persons in household	0-79 years		8274[1]			1571[2]		
		number		3.2	2.5-3.9		3.7	3.3-4.4
child(ren) in household who visit a day-care centre	0-79 years		7290[1]			1375[2]		
		yes	1025	9.2	5.5-13.5	157	9.4	6.0-14.8
child(ren) in household who visit elementary school	0-79 years		7176[1]			1381[2]		
		yes	2682	33.1	21.7-43.1	579	42.3	36.0-50.0

1 <8345 because of missing values
2 <1589 because of missing values

Table B2. Education of the participants

		national sample			low immunisation coverage sample		
variable	age	n	mean	range	n	mean	range
highest accomplished education	17-79 years	5449[1]			1069[2]		
primary school (lagere school)		986	13.7	7.7-27.8	288	20.5	12.1-29.9
lower vocational secondary education (lager beroepsonderwijs)		1342	23.4	9.5-37.5	308	29.4	21.7-34.5
lower general secondary education ((m)ulo, mavo)		805	15.0	9.6-26.9	145	14.6	6.1-25.0
intermediate vocational secondary education (middelbaar beroepsonderwijs)		864	17.6	8.1-26.5	141	15.2	11.1-17.5
intermediate general secondary education (mms, havo, hbs, vwo, lyceum, atheneum of gymnasium; t/m derde years)		152	3.2	0.0-8.3	32	3.4	1.3-6.2
higher general secondary education (mms, havo, hbs, vwo, lyceum, atheneum of gymnasium; voltooid)		402	9.8	2.3-23.1	52	6.5	2.7-11.7
higher vocational secondary education (hoger beroepsonderwijs)		662	12.4	3.1-26.2	88	8.5	4.9-15.5
university education (old style) (universiteit t/m kandidaatsexamen (oude stijl))		38	0.7	0.0-2.3	1	0.1	--
university education (universiteit)		198	4.1	0.7-20.7	14	1.4	0.0-4.9

1 <5493 because of missing values

2 <1076 because of missing values

Table B2 continued. Education of the participants

		national sample			low immunisation coverage sample		
variable	age	n	mean	range	n	mean	range
presently receiving education	17-79 years	5420[1]			1059[2]		
yes		602	17.0	8.0-38.7	93	13.6	8.3-23.6
lower vocational secondary education (lager beroepsonderwijs)		17	2.9	0.0-26.1	2	3.0	0.0-21.0
lower general secondary education ((m)ulo, mavo)		11	1.9	0.0-20.7	1	2.5	--
intermediate vocational secondary education (middelbaar beroepsonderwijs)		138	15.1	0.0-51.0	26	21.0	4.2-40.6
higher general secondary education (havo, vwo, atheneum of gymnasium)		51	4.6	0.0-25.6	10	4.0	0.0-10.4
higher vocational secondary education (hoger beroepsonderwijs)		132	22.3	0.0-58.0	12	17.8	3.1-32.9
university education (universiteit)		62	9.8	0.0-34.1	1	0.3	--
other		184	43.4	0.0-71.1	38	51.5	27.4-71.5

1 <5493 because of missing values

2 <1076 because of missing values

Table B2 continued. Education of the participants

		national sample			low immunisation coverage sample		
variable	age	n	mean	range	n	mean	range
highest accomplished education of parents	0-16 years	2799[1]			505[2]		
primary school (lagere school)		99	4.8	0.0-28.7	10	2.3	0.0-8.5
lower vocational secondary education (lager beroepsonderwijs)		436	17.6	1.2-44.8	122	31.5	23.8-38.1
lower general secondary education ((m)ulo, mavo)		342	13.8	1.7-25.2	88	16.1	8.4-21.9
intermediate vocational secondary education (middelbaar beroepsonderwijs)		620	20.0	3.0-37.8	111	20.4	12.3-30.6
intermediate general secondary education (mms, havo, hbs, vwo, lyceum, atheneum of gymnasium; t/m derde years)		81	2.7	0.0-11.0	14	1.9	0.0-4.1
higher general secondary education (mms, havo, hbs, vwo, lyceum, atheneum of gymnasium; voltooid)		318	9.6	1.6-18.7	46	7.3	4.5-13.7
higher vocational secondary education (hoger beroepsonderwijs)		604	20.9	3.1-33.3	92	16.6	5.3-24.2
university education (old style) (universiteit t/m kandidaatsexamen (oude stijl))		34	1.1	0.0-8.6	5	1.2	0.0-3.9
university education (universiteit)		265	9.3	0.9-42.3	17	2.7	1.4-4.9

1 <2852 because of missing values

2 <513 because of missing values

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Table B3. Employment of the participants

			national sample			low immunisation coverage sample		
variable	age		n	mean	range	n	mean	range
job or paid employment	17-79 years		5447[1]			1070[2]		
		employed	2214	47.3	35.9-60.2	397	45.0	39.5-51.1
		self-employed	313	5.5	1.0-15.5	76	7.3	4.7-11.4
		housewife/husband	1326	20.3	9.0-29.6	329	25.8	23.0-29.2
		unemployed	170	3.8	0.0-9.7	18	1.7	0.4-3.0
		retired	842	9.9	4.7-18.2	149	9.2	7.0-12.2
		incapacitated	246	4.2	0.8-10.2	48	3.8	2.0-5.6
		otherwise	336	9.0	1.7-24.1	53	7.3	5.2-9.6
job or paid employment of father	0-16 years		2776[3]			504[4]		
		employed	2153	75.0	52.8-91.6	392	76.0	65.6-83.6
		self-employed	398	14.5	2.2-39.6	83	18.4	14.5-24.2
		housewife	15	0.5	0.0-3.5	1	0.0	--
		unemployed	90	4.1	0.2-38.3	10	1.6	0.0-3.9
		retired	4	0.4	0.0-4.6	1	0.4	--
		incapacitated	56	2.9	0.0-12.2	10	2.6	0.0-12.2
		otherwise	60	2.6	0.0-11.2	7	0.9	0.0-2.8
job or paid work of mother	0-16 years		2794[3]			497[4]		
		employed	1141	38.5	18.6-64.2	127	25.8	16.1-33.8
		self-employed	166	6.7	0.0-28.4	31	7.1	1.9-11.0
		housewife	1321	48.8	25.3-70.9	313	63.2	54.5-72.7
		unemployed	59	1.6	0.0-11.2	6	0.7	0.0-2.7
		retired	1	0.2	0.0-6.6	0	--	--
		incapacitated	31	1.1	0.0-5.6	4	0.5	0.0-1.8
		otherwise	81	3.1	0.0-8.5	16	2.7	0.0-7.4

1
2 <5493 because of missing values
3 <1076 because of missing values
4 <2852 because of missing values
<513 because of missing values

Table B4. Native country and ethnicity

			national sample			low immunisation coverage sample		
variable	age		n	mean	range	n	mean	range
living in the Netherlands since birth	0-79 years		8320[1]			1581[2]		
		yes	7922	93.8	77.5-100.0	1531	96.7	93.5-99.3
native country father	0-79 years		8316[1]			1584[2]		
		the Netherlands	7646	91.5	67.8-99.8	1507	95.3	91.4-98.3
native country mother	0-79 years		8318[1]			1582[2]		
		the Netherlands	7586	90.7	67.4-98.6	1505	95.2	92.3-98.1
etnicity[3]	0-79 years		8330[1]			1582[2]		
		Dutch	7341	87.7	62.3-98.4	1470	93.0	89.9-96.8

1 <8345 because of missing values

2 <1589 because of missing values

3 ethnicity: Dutch if native country of participant and his parents was the Netherlands, non-Dutch if native country of participant or/and parent(s) was not the Netherlands.

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Table B5. Overview religions of participants

		national sample			low immunisation coverage sample		
variable	age	n	mean	range	n	mean	range
	0-79 years	8308[1]			1583[2]		
Non		2689	34.7	4.9-71.4	323	20.8	12.8-31.9
Roman Catholic		2794	32.6	1.8-90.4	95	5.9	2.7-10.1
Old Catholic		8	0.1	0.0-0.8	0	--	--
Dutch Reformed		*1377*	*16.0*	0.4-49.3	703	45.3	34.1-55.3
		1030[3]			*523*[4]		
Liberal school		*209*	*20.5*	*0.0-70.0*	*54*	*11.1*	*3.2-23.1*
Middle orthodox		*90*	*6.9*	*0.0-33.9*	*33*	*5.7*	*0.0-16.8*
Gekrookte riet		*3*	*0.1*	*0.0-3.7*	*13*	*2.6*	*0.0-8.2*
reformed bond		*111*	*6.5*	*0.0-50.0*	*178*	*32.2*	*8.4-69.1*
Confessional school		*70*	*4.6*	*0.0-31.7*	*58*	*9.8*	*1.4-36.4*
Other		*28*	*3.6*	*0.0-22.5*	*12*	*2.4*	*0.0-8.7*
No school		*342*	*40.4*	*0.0-100.0*	*81*	*15.0*	*1.9-28.8*
Don't know		*177*	*17.4*	*0.0-100.0*	*93*	*21.4*	*13.5-33.5*
Reformed Churches in the Netherlands (Synodal)		409	4.7	0.0-25.0	84	4.8	0.1-7.2
Reformed Churches ('Vrijgemaakt', art. 31)		86	1.1	0.0-23.4	8	0.6	0.0-2.8
Dutch Reformed Churches		90	1.0	0.0-4.8	22	1.5	0.5-2.6
Christian Reformed Churches		74	0.9	0.0-5.7	27	1.5	0.0-6.4
Reformed Congregations (in the Netherlands and North-America)		38	0.4	0.0-6.2	129	8.2	1.9-20.3
Reformed Congregations in the Netherlands		15	0.2	0.0-4.0	64	3.8	0.9-9.6
Old-Reformed Congregations		2	0.0	0.0-0.4	49	3.1	0.0-21.0
Antroposofhic		8	0.1	0.0-0.9	1	0.1	--
Humanistic		50	0.6	0.0-3.5	3	0.2	0.0-0.6
Hindu		21	0.2	0.0-1.5	0	--	--
Boeddhist		7	0.1	0.0-1.3	2	0.1	0.0-0.6
Islamic		224	2.7	0.0-17.0	20	1.0	0.0-3.2
Jewish		5	0.1	0.0-1.0	0	--	--
Jehovah		12	0.1	0.0-0.9	1	0.1	--
Two or more of above		116	0.9	0.0-2.9	20	0.9	0.1-2.2
Other		283	3.4	0.0-9.9	32	2.1	0.9-6.0

1 <8345 because of missing values
2 <1589 because of missing values
3 <1377 because of missing values
4 <703 because of missing values

Table B6. Military service for participants

variable	age		national sample n	mean men	range	n	mean women	range
been in military service	18-79 years		1514[1]			1646[2]		
		yes	650	42.9	15.6-64.9	3	0.1	0.0-2.1
brought along military booklet								
		yes	251	38.9	0.0-83.2	1	33.3	0.0-100.0

1 <2442 because of missing values
2 <2956 because of missing values

Table B7. Travelling data of participants

Ever been in one or more of the following countries	0-79 years	national sample n	mean	range	low immunisation coverage sample n	mean	range
Eastern Europe/former Soviet Union		382	15.0	0.0-34.3	74	19.6	7.1-30.9
Turkey/Greece		836	29.1	15.4-48.0	96	23.4	15.2-28.7
Middle East		115	3.3	0.0-11.7	23	6.7	1.3-26.6
Asia		339	10.1	2.3-19.4	45	9.5	1.8-22.1
Central America		284	9.4	1.0-24.6	36	8.8	2.2-16.6
South America		191	6.8	0.0-18.7	30	7.7	1.2-16.1
Middle/Southern Africa		165	4.9	0.0-16.1	28	5.9	1.6-14.4
Northern Africa		652	21.4	10.0-47.9	76	18.8	5.1-35.7
None of the above		5381	57.5	33.6-73.5	1181	71.7	61.0-79.9
Ever stayed in a foreign country for over three months (name last two)	0-79 years	8300[1]			1589		
yes		866	11.9	3.8-28.2	117	7.1	3.2-9.5
country one		849	11.6	3.8-28.1	113	6.8	2.7-9.4
country two		195	2.8	0.3-9.1	24	1.5	0.0-3.6

1 <8345 because of missing values

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Table B8. Coughing and Pertussis (Whooping Cough) of participants

			national sample			low immunisation coverage sample		
	age		n	mean	range	n	mean	range
more than 2 weeks of coughing the last 12 months	0-79 years		8289[1]			1585[2]		
		yes	937	10.7	4.6-18.7	138	7.9	4.7-10.0
		no	7266	88.1	80.2-95.4	1437	91.5	89.6-95.3
		don't know	86	1.2	0.0-3.4	10	0.6	0.0-1.6
more than 2 weeks of coughing longer than 12 months ago	0-79 years		8202[1]			1569[2]		
		yes	817	10.4	6.2-16.7	116	7.3	3.8-10.2
		no	7151	86.2	80.6-91.3	1409	89.3	86.8-94.2
		don't know	234	3.4	0.4-7.7	44	3.3	1.6-5.2
pertussis in the last 12 months	0-79 years		8264[1]			1579[2]		
		yes	16	0.1	0.0-1.3	2	0.1	0.0-0.3
		no	8218	99.5	98.1-100.0	1567	99.5	99.0-100.0
		don't know	30	0.3	0.0-1.9	10	0.4	0.0-1.0
pertussis longer than 12 months ago	0-79 years		8218[1]			1580[2]		
		yes	153	2.0	0.0-4.3	75	2.6	0.8-3.9
		no	7982	96.9	93.2-100.0	48	96.1	94.9-98.0
		don't know	83	1.2	0.0-5.4	1457	1.3	0.4-2.3

1 <8345 because of missing values

2 <1589 because of missing values

Table B9. Otitis of participants

	age		national sample n	mean	range
inflammation of the ear in the last 12 months	0-79 years		8285[1]		
		yes, once	515	5.2	1.0-9.5
		yes, more than once	251	2.5	0.6-7.0
		earache	*597*	*73.3*	*47.0-98.9*
		loss of hearing	*209*	*31.4*	*4.1-75.8*
		runny ear	*180*	*21.4*	*0.0-57.5*
		itch in ear	*182*	*29.0*	*3.5-64.6*
		redness in ear	*163*	*16.2*	*0.0-41.7*
		swelling in ear	*62*	*8.4*	*0.0-27.1*
		scaling in ear	*66*	*13.1*	*0.0-35.5*
		no	7519	92.3	86.4-97.0
to general practitioner for symptoms of inflammation of the ear	0-79 years		735[2]		
		yes	596	77.1	50.6-100.0
diagnosis		*otitis*	*303*	*47.4*	*9.6-100.0*
		inflammation of the auditory duct	*107*	*20.5*	*0.0-53.2*
		both	*3*	*0.7*	*0.0-13.4*
		otherwise	*83*	*17.8*	*0.0-44.5*
		don't know	*83*	*13.6*	*0.0-65.8*
diagnosis when had inflammations of the ear more than once in the last year	0-79 years		120[3]		
		otitis	104	86.8	27.6-100.0
		otherwise	16	13.2	0.0-72.4

1 <8345 because of missing values
2 <766 because of missing values
3 <251 because of missing values

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Table B10. Diabetes and blood donation of the participants

			national sample		
	age		n	mean	range
diabetes	0-79 years		8356[1]		
		yes	136	1.4	0.0-3.8
if yes: age of diagnosis			125	6.4	1.2-18.2
diabetes in the family					
father/mother	0-79 years	yes	67	55.3	0.0-100.0
brother/sister	0-79 years	yes	42	31.4	0.0-100.0
son/daughter	17-79 years	yes	7	5.7	0.0-53.5
use of:	0-79 years				
diet		yes	77	66.9	0.0-100.0
tablets		yes	76	64.8	0.0-100.0
insulin-injections		yes	40	45.3	0.0-100.0
if yes, injections started in first half year after diagnosis diabetes		*yes*	*22*	*43.5*	*0.0-100.0*
donating blood	18-79 years		5366[2]		
yes, last time in 1994-1996			490	9.9	2.8-19.9
yes, last time before 1994			783	12.9	6.3-18.7
no			4093	77.3	62.6-86.7

1 <8345 because of missing values
2 <5399 because of missing values

Table B11. Chronic diseases of the participants

	national sample			low immunisation coverage sample		
	n	%	range	n	%	range
	8172[1]			1562[2]		
Diabetes	136	1.4	0.0-3.8	21	1.1	0.0-3.1
COPD or asthma	609	7.2	3.8-11.4	101	6.2	4.9-7.6
Inflammation of cavities	759	10.9	5.6-19.4	137	10.4	7.8-12.0
serious heart condition	150	1.5	0.0-3.8	33	1.8	0.7-2.8
high blood pressure	674	7.8	3.9-16.1	119	7.0	4.0-10.9
(consequences of) stroke	42	0.5	0.0-2.0	12	0.6	0.0-1.3
stomach/duodenum ulcer	96	1.2	0.0-4.3	17	0.9	0.0-2.5
serious intestinal disorders, > 3 months	124	1.5	0.0-3.7	18	1.0	0.0-2.3
bilestones or inflammation of the gall bladder	64	0.8	0.0-2.3	12	0.6	0.0-1.7
liver disease/cirrhosis	16	0.3	0.0-1.8	1	0.1	0.0-0.6
chronic cystitis	79	1.2	0.0-5.6	14	0.9	0.0-2.2
kidney stones	58	0.7	0.0-4.7	6	0.4	0.0-1.1
severe kidney disease	15	0.2	0.0-1.7	3	0.1	0.0-0.9
thyroid gland disease	102	1.2	0.0-2.8	26	1.5	0.0-3.8
persistent back disorder, >3 months or hernia	511	6.7	3.0-11.3	99	6.6	4.7-9.9
arthritis in knees, hips or hands	625	6.9	3.8-12.4	119	6.3	5.2-7.9
rheumatism in hands of feet	164	1.9	0.0-5.4	30	1.7	0.3-3.7
other chronic rheumatism, >3 months	72	0.9	0.0-2.1	7	0.4	0.0-1.0
epilepsy	40	0.5	0.0-1.9	2	0.1	0.0-3.4
dizziness	147	2.0	0.0-6.0	15	1.0	0.0-2.5
migraine	462	7.0	2.4-13.8	91	6.5	4.4-9.7
serious skin disease	94	1.2	0.0-3.2	24	1.5	0.8-2.4
cancer	86	1.0	0.0-2.5	16	0.8	0.0-1.5
neurological disorder	79	1.0	0.0-4.0	19	1.1	0.2-2.1
psychological disorder	147	2.4	0.0-10.8	27	1.9	0.4-3.9
chronic muscle disease	37	0.4	0.0-1.4	5	0.2	0.0-0.6
blood disease	10	0.1	0.0-0.8	2	0.2	0.0-1.0
chronic eye disease	66	0.8	0.0-3.6	19	1.0	0.4-2.0
chronic ear disease	133	1.5	0.2-4.3	24	1.5	0.8-2.3
other diseases or disorders	845	10.2	5.7-24.0	150	9.4	7.0-12.8
no disease	4504	53.3	41.6-64.9	878	56.4	50.3-64.2

1 <8345 because of missing values

2 <1589 because of missing values

Table B12. Reported sexual transmitted diseases of the participants

	age		national sample n	mean	range
	17-79 years				
gonorrhoea		yes	57	1.2	0.0-7.1
syphilis		yes	4	0.1	0.0-1.7
chlamydia		yes	29	0.8	0.0-4.4
herpes genitalis		yes	15	0.4	0.0-3.7
genital warts (human papilloma virus)		yes	23	0.5	0.0-2.4
hepatitis B		yes	12	0.2	0.0-1.0

Table B13. Sexual history of the participants

	age	national sample men n	mean	range	women n	mean	range
age at first sexual intercourse	17-79 years	2386[1]			2886[2]		
mean age (years)		1738	15.0	12.2-18.6	2293	15.7	13.8-17.9
not applicable		123	7.6	0.0-20.7	136	6.0	1.2-13.0
don't know		278	10.3	3.7-22.3	148	4.6	0.7-10.8
won't answer		247	10.1	0.0-20.4	309	10.3	3.5-21.5
number of sexual partners in last year	17-79 years	2376[1]			2820[2]		
mean number		1854	0.9	0.6-2.2	2088	0.8	0.6-1.1
not applicable		331	15.1	3.0-33.4	558	18.3	5.4-56.4
don't know		23	1.2	0.0-9.6	7	0.3	0.0-3.1
won't answer		168	7.6	0.0-22.3	167	5.7	0.0-12.2
sex of sexual partners in last year	17-79 years	2366[1]			2797[2]		
solely men		14	1.2	0.0-13.9	2106	76.1	39.5-87.0
both men/women		10	0.5	0.0-7.2	6	0.2	0.0-1.4
solely women		1912	79.4	50.0-93.7	12	0.6	0.0-7.5
not applicable		307	13.9	1.5-31.0	517	17.8	5.3-61.0
won't answer		123	5.1	0.0-17.4	156	5.4	0.0-12.9

1 <2488 because of missing values
2 <3004 because of missing values

Table B14. Contact with surface water of the participants

			national sample		
	age		n	mean	range
contact with surface water in last 12 months	0-79 years		8308[1]		
		yes	2989	41.0	16.4-60.4
if yes:					
	0-79 years	free time-activity	2900	96.6	85.4-100.0
		in summer	*2838*	*97.2*	*83.7-100.0*
		less than once a month	868	33.2	13.8-54.1
		1-3 times a month	874	31.3	20.0-49.5
		once a week	436	14.5	5.5-29.9
		more than once a week	651	20.6	3.0-39.2
		not once	9	0.5	0.0-10.0
		in winter	*1464*	*28.0*	*10.1-52.0*
		less than once a month	520	37.6	9.0-96.0
		1-3 times a month	103	8.3	0.0-20.0
		once a week	49	3.5	0.0-10.9
		more than once a week	45	3.5	0.0-13.5
		not once	747	47.1	0.0-78.0
	17-79 years	professional activity	109	7.2	0.0-36.4
		in summer	*100*	*88.4*	*34.6-100.0*
		less than once a month	32	35.5	0.0-100.0
		1-3 times a month	21	20.5	0.0-100.0
		once a week	14	12.9	0.0-100.0
		more than once a week	30	27.3	0.0-100.0
		not once	3	3.7	0.0-65.4
		in winter	*88*	*82.9*	*31.8-100.0*
		less than once a month	29	38.3	0.0-100.0
		1-3 times a month	22	25.5	0.0-100.0
		once a week	9	7.8	0.0-52.7
		more than once a week	24	25.5	0.0-76.8
		not once	4	2.9	0.0-48.7
	0-79 years	accident	34	0.4	0.0-1.5

[1] <8345 because of missing values

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Table B15. Gardening and playing in sandbox of the participants

			national sample		
	age		n	mean	range
with bare hands in soil in the last year	0-79 years		8290[1]		
		yes	5467	69.5	42.3-88.5
		mean amount of time (hours)	4993	3.1	1.8-5.8
playing in sandbox	0-12 years		2260[2]		
		yes	1229	62.1	45.3-80.5
		in the garden	*836*	*57.0*	*20.0-92.8*
		in school	*873*	*71.2*	*45.5-96.6*
		in the park	*359*	*32.4*	*0.0-83.1*
		mean amount of time (hours)	1136	0.4	0.2-0.7
putting sand in mouth	0-12 years		2159[2]		
		no, never	1707	84.3	72.8-95.5
		sometimes	425	14.9	4.5-23.4
		often	27	0.8	0.0-4.2

1 <8345 because of missing values
2 <2280 because of missing values

Table B16. Contact with animals of the participants

			national sample		
	age		n	mean	range
keeping pets	0-79 years		8301[1]		
		yes	5176	64.3	48.5-77.4
		dog(s)	*2454*	*47.2*	*25.1-67.3*
		cat(s)	*2378*	*46.7*	*22.2-81.1*
		bird(s)	*1365*	*26.8*	*8.4-50.1*
		rabbit, guinea pig, hamster	*1688*	*29.7*	*14.8-45.1*
		otherwise	*630*	*11.6*	*3.2-22.9*
keeping small cattle	0-79 years		8203[1]		
		yes	828	9.8	0.6-38.4
		pig(s)	*87*	*8.7*	*0.0-37.4*
		cow(s)	*204*	*19.0*	*0.0-47.1*
		sheep	*234*	*27.0*	*0.0-100.0*
		poultry	*466*	*62.3*	*0.0-100.0*
		other	*325*	*37.0*	*0.0-76.30*
contact with animals in profession	17-79 years		5373[2]		
		yes	299	5.9	0.0-16.4
number of tick-bites in the last 5 years	0-79 years		8171[1]		
		never	7569	92.2	76.5-100.0
		1-4 times	546	7.0	0.0-21.2
		5-9 times	31	0.4	0.0-2.5
		10 of more times	25	0.3	0.0-1.5

1 <8345 because of missing values
2 <5493 because of missing values

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Table B17. Smoking and alcohol consumption for the participants

			national sample		
	age		n	mean	range
smoking cigarettes	12-79 years		6049[1]		
		yes	1586	27.6	19.6-45.5
		number of cigarettes per day	1571	11.1	7.3-14.8
		no	4463	72.4	54.5-80.4
		never	*2553*	*64.9*	*56.2-72.4*
		quit	*1518*	*35.1*	*27.6-43.8*
alcohol consumption	12-79 years		6034[1]		
		no, never	1324	22.3	13.0-36.2
		no, quit	136	2.1	0.3-6.6
		less than 1 glass per week	1281	21.6	12.5-32.2
		more than 1 glass per week	3293	53.9	41.4-65.5
		beer	*1865*	*61.5*	*41.9-85.0*
		number of glasses per week	1845	7.6	4.8-11.6
		wine	*1581*	*46.1*	*24.2-71.5*
		number of glasses per week	1568	3.3	1.8-4.9
		sherry, port, vermouth and other suchlike liqueurs.	*731*	*20.3*	*8.4-34.0*
		number of glasses per week	716	2.3	1.0-5.4
		hard liqueur	*1149*	*32.6*	*17.5-42.8*
		number of glasses per week	1143	3.2	1.7-4.9

[1] <6065 because of missing values

Wat wordt van u gevraagd?

Zoals gezegd gaat het om een vragenlijst en een beetje bloed.

1. De vragenlijst bevat vragen over uw persoonlijke omstandigheden, uw gezondheid en doorgemaakte ziekten, inentingen en over bezigheden die mogelijk verband houden met infectieziekten. U kunt de lijst thuis invullen. Dat duurt ongeveer 15 minuten.

2. Voor het geven van wat bloed nodigen wij u uit voor een spreekuur, georganiseerd door uw GGD. De datum en tijd vindt u vermeld op het gele afspraakformulier.

Er wordt wat bloed afgenomen uit uw arm, voldoende voor twee reageerbuisjes (van kleine kinderen minder). Er is geen sprake van dat u zich daarna flauw of slap zult voelen - daarvoor is de hoeveelheid veel te gering.

Uw bezoek aan het speciale spreekuur zal ongeveer een kwartiertje van uw tijd vragen. Uit erkentelijkheid voor uw medewerking ontvangt u onmiddellijk na de bloedafname een cadeaubon.

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Wat gebeurt er met de gegevens?

Alle informatie die wij van u krijgen wordt anoniem - dus zonder naamsvermelding - verwerkt in rapporten en statistieken.
Uw bloed wordt - eveneens anoniem - onderzocht op afweerstoffen tegen een aantal infectieziekten. Op AIDS wordt uw bloed niet getest.

Waar kunt u met uw vragen terecht?

Voor alle vragen over het onderzoek en uw medewerking daaraan kunt u uw GGD bellen. U vindt het telefoonnummer in de uitnodigingsbrief.

Bent u verhinderd?

Wanneer het tijdstip op het gele formulier u niet schikt, kunt u naar het 'inloop' spreekuur komen, zoals op het gele formulier is toegelicht.
Ook kan via de GGD een afspraak worden gemaakt voor een huisbezoek, wanneer het voor u niet mogelijk is naar het spreekuur toe te komen.

Graag meenemen naar het spreekuur:
1. de ingevulde vragenlijst;
2. uw inentingsboekjes.

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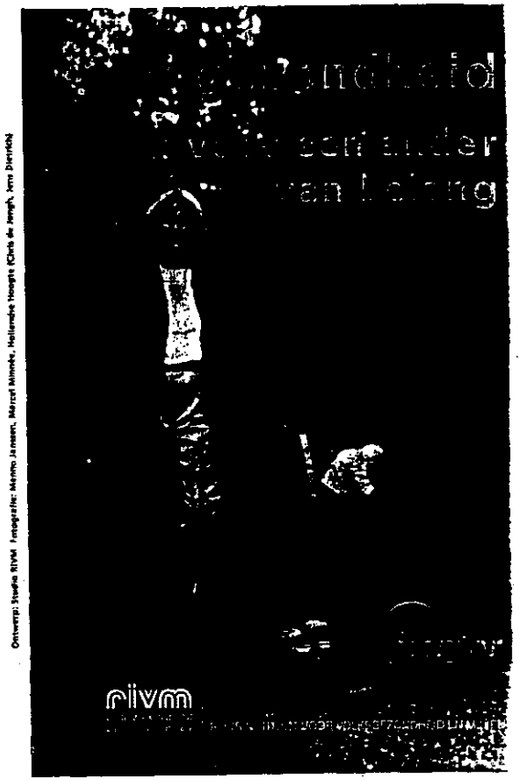

Ontwerp: Studio RIVM Fotografie: Marma Janssen, Marcel Minnée, Hollandse Hoogte (Chris de Jonge), Jerry Dieterich

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PIENTER-project

Zijn wij in Nederland goed genoeg beschermd tegen infectieziekten? Hebben wij voldoende afweerstoffen in ons bloed? Of kunnen epidemieën een kans krijgen?
Om daar achter te komen wordt dit jaar een landelijk onderzoek gedaan naar onze weerstand tegen infectieziekten.
Wij vragen u daarvoor uw medewerking.

Waarom u?

Uw naam is op basis van toeval getrokken uit het bevolkingsregister in uw gemeente, net als die van een groot aantal anderen tussen 0 en 80 jaar in uw gemeente en verschillende andere Nederlandse gemeenten.
Op die manier vragen wij vijftienduizend Nederlanders om medewerking.

Het verzoek aan u is:

1. wat vragen te beantwoorden (zonder naam of adres) en
2. een beetje bloed te geven (twee buisjes).

- Er is voor u geen enkel risico aan het onderzoek verbonden;
- Alle gegevens worden zonder naamsvermelding geregistreerd;
- Als dank voor uw medewerking bieden wij u een cadeaubon aan.

Waarom het onderzoek?

Vroeger stierven veel mensen aan infectieziekten. Nu komen die gelukkig veel minder voor. Dat komt door een betere welstand en hygiëne, maar ook doordat nu tegen een aantal infectieziekten, zoals kinkhoest, kinderverlamming (poliomyelitis), rode hond en mazelen, vaccinatie (inenting) mogelijk is.

Sinds de jaren '50 kan in Nederland ieder kind hiertegen worden ingeënt.

Maar niet voor alle infectieziekten zijn vaccins voorhanden. Zo wordt nog gewerkt aan een entstof tegen diverse vormen van nekkramp; te zijner tijd kunnen die wellicht aan het vaccinatieprogramma worden toegevoegd.

Om infectieziekten onder controle te houden is blijvende waakzaamheid nodig. Daarom dienen wij te weten hoe effectief de bescherming is, zowel bij jonge als bij oudere mensen, bij zieken en bij gezonden.

Bij een groot aantal Nederlanders wordt daarom gemeten hoeveel afweerstoffen hun bloed bevat. De resultaten van dat onderzoek kunnen bijdragen tot de verbetering van vaccinatie en de ontwikkeling van nieuwe vaccins.

Met uw medewerking aan het onderzoek levert u dus een bijdrage aan de volksgezondheid.

Wie doet het onderzoek?

Het onderzoek is een initiatief van het Rijksinstituut voor Volksgezondheid en Milieu te Bilthoven. Het RIVM bestaat al meer dan tachtig jaar en adviseert de regering over gezondheids- en milieukwesties op grond van eigen onderzoek.

Het PIENTER-project wordt door het RIVM uitgevoerd in samenwerking met de GGD'en in vijftig gemeenten.

De officiële naam van het onderzoek is 'Peiling Immunisatie Effect Nederland Ter Evaluatie van het Rijksvaccinatieprogramma', maar gemakshalve hebben wij daarvan maar de beginletters samengetrokken tot 'PIENTER-project'.

Uitnodigingsbrief voor deelname aan het Pienter-project
voor uitgenodigde **personen van 0 t/m 11 jaar**

briefhoofd GG en GD Utrecht

Geachte ouder(s)/verzorger(s),

Uw kind is uitgekozen om deel te nemen aan het landelijk onderzoek naar de bescherming van de Nederlandse bevolking tegen infectieziekten, dat wordt uitgevoerd op initatief van het Rijksinstituut voor Volksgezondheid en Milieu (RIVM). Doel van het onderzoek is infectieziekten in Nederland in de toekomst nog beter te kunnen voorkómen en bestrijden.

De GGD voert dit onderzoek in uw gemeente uit onder verantwoordelijkheid van het RIVM. Wij hebben de naam van uw kind gekregen door de gemeente een willekeurige keuze uit het bevolkingsregister te laten maken. Het is voor het onderzoek - en daarmee voor de volksgezondheid in Nederland - van belang dat iedereen die wordt uitgenodigd, dus ook uw kind, aan het onderzoek deelneemt: jong en oud, gezond en minder gezond, ingeënt of niet ingeënt.

Wij vragen of u bereid bent bij uw kind één keer wat bloed te laten afnemen op een speciaal spreekuur. Bij heel kleine kinderen kan dit behalve door een prik in de elleboogsholte eventueel ook door een vinger- of hielprikje. Dit in overleg met u. Daarnaast vragen wij u wat vragen over uw kind te beantwoorden. In de bijgesloten folder vindt u alle informatie over het onderzoek en wat de deelname daaraan precies inhoudt.

Het beste kunt u komen op het tijdstip dat op het gele afspraakformulier is vermeld. Schikt u dat niet, dan is er een inloopspreekuur aan het begin van de avond. Mocht het u onmogelijk zijn met uw kind naar ons toe te komen, dan kan eventueel een verpleegkundige bij u aan huis komen. U kunt dat aan de GGD kenbaar maken op het telefoonnummer: 030 - 958911.

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Uitnodigingsbrief voor deelname aan het Pienter-project
voor uitgenodigde **personen van 12 t/m 16 jaar**

briefhoofd GG en GD Utrecht

Hallo!

Je bent uitgekozen om deel te nemen aan het landelijk onderzoek naar de bescherming van de Nederlandse bevolking tegen infectieziekten, dat wordt uitgevoerd op initatief van het Rijksinstituut voor Volksgezondheid en Milieu (RIVM). Doel van het onderzoek is infectieziekten in Nederland in de toekomst nog beter te kunnen voorkómen en bestrijden.

De GGD voert dit onderzoek in jouw gemeente uit onder verantwoordelijkheid van het RIVM. Wij hebben je naam gekregen door de gemeente een willekeurige keuze uit het bevolkingsregister te laten maken. Het is voor het onderzoek - en daarmee voor de volksgezondheid in Nederland - van belang dat iedereen die wordt uitgenodigd, dus ook jij, aan het onderzoek deelneemt: jong en oud, gezond en minder gezond, ingeënt of niet ingeënt.

Wij vragen of je bereid bent een vragenlijst in te vullen en op een speciaal spreekuur één keer wat bloed te laten afnemen. Het beste kun je komen op het tijdstip dat op het gele afspraakformulier is vermeld. Is dat niet mogelijk, dan is er een inloopspreekuur aan het begin van de avond. Bij degenen die niet in staat zijn naar het spreekuur toe te komen, kan eventueel een verpleegkundige aan huis langskomen. Je kunt dat aan de GGD kenbaar maken op het telefoonnummer: 030 - 958911.
In de bijgesloten folder vind je alle informatie over het onderzoek en wat je deelname daaraan precies inhoudt.

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Uitnodigingsbrief voor deelname aan het Pienter-project voor uitgenodigde **personen van 17 jaar en ouder**

briefhoofd GG en GD Utrecht

Geachte heer, mevrouw,

U bent uitgekozen om deel te nemen aan het landelijk onderzoek naar de bescherming van de Nederlandse bevolking tegen infectieziekten, dat wordt uitgevoerd op initatief van het Rijksinstituut voor Volksgezondheid en Milieu (RIVM). Doel van het onderzoek is infectieziekten in Nederland in de toekomst nog beter te kunnen voorkómen en bestrijden.

De GGD voert dit onderzoek in uw gemeente uit onder verantwoordelijkheid van het RIVM. Wij hebben uw naam gekregen door de gemeente een willekeurige keuze uit het bevolkingsregister te laten maken. Het is voor het onderzoek - en daarmee voor de volksgezondheid in Nederland - van belang dat iedereen die wordt uitgenodigd, dus ook u, aan het onderzoek deelneemt: jong en oud, gezond en minder gezond, ingeënt of niet ingeënt.

Wij vragen of u bereid bent om een vragenlijst in te vullen en op een speciaal spreekuur één keer wat bloed te laten afnemen. Het beste kunt u komen op het tijdstip dat op het gele afspraakformulier is vermeld. Is dat niet mogelijk, dan is er een inloopspreekuur aan het begin van de avond. Bij degenen die niet in staat zijn naar het spreekuur toe te komen, kan eventueel een verpleegkundige aan huis langskomen. U kunt dat aan de GGD kenbaar maken op het telefoonnummer: 030-958911. Over een week zullen wij u opbellen om uw eventuele vragen over het onderzoek te beantwoorden. Aan degenen die niet deelnemen willen we later enkele korte vragen stellen; dit is van belang om een uitspraak te kunnen doen over de geldigheid van de onderzoeksresultaten.
In de bijgesloten folder vindt u alle informatie over het onderzoek en wat de deelname daaraan precies inhoudt.

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het pienter project

AFSPRAAKFORMULIER

In verband met het Pienter-project is het onderzoeksteam voor bloedafname van de deelnemers aanwezig op ....dag .....(datum) en .....dag ..... (datum) in het .....gebouw, adres te .....

U WORDT UITGENODIGD OM
OP .....DAG
OM ..... UUR TE KOMEN.

Wanneer deze tijd u geenszins schikt, kunt u ook komen naar een inloopspreekuur op ....dag ..... en ....dag ..... en wel tussen 17.00 en 19.30 uur.

AFSPRAAKFORMULIER
VRAGENLIJST EN
INENTINGBOEKJE(S)
GRAAG MEENEMEN NAAR SPREEKUUR!

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A

Nr. □□□□□□□□□

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Toelichting bij de vragenlijst

Deze vragenlijst bestaat uit 42 vragen. De vragenlijst begint met enkele algemene vragen over uw kind. Verder bevat de vragenlijst vragen over inentingen die uw kind heeft gehad en over verblijf in het buitenland, over de gezondheid van uw kind en ziekten die uw kind heeft doorgemaakt. Tenslotte worden enkele vragen gesteld over bezigheden die mogelijk verband houden met infectieziekten.

Bij de meeste vragen staat een aantal antwoordmogelijkheden aangegeven. U wordt verzocht het antwoord dat voor uw kind van toepassing is òf dat er het beste mee overeenstemt, aan te kruisen.
Wanneer u meer antwoorden kunt aankruisen, wordt dit uitdrukkelijk bij de vraag vermeld.
Bij sommige onderdelen wordt om een toelichting gevraagd: u kunt deze in de daarvoor bestemde ruimte opschrijven. De nummertjes bij de vragen hebben voor u geen betekenis, zij dienen voor administratieve doeleinden.

Het invullen van de vragenlijst kost ongeveer 20 minuten.
Wilt u bij **alle** vragen een antwoord aankruisen?

Veel succes bij het invullen van de vragenlijst!

Invullen van de vragenlijst door de ouder(s)/verzorger(s)

De vragen in de vragenlijst hebben betrekking op de persoon die vermeld staat op de **uitnodigingsbrief** (= uitgenodigde persoon). Aangezien de uitgenodigde persoon over het algemeen te jong zal zijn om de vragenlijst in te vullen, zijn de vragen gericht aan de ouder(s)/verzorger(s). Hierbij is het belangrijk antwoorden in te vullen die voor de **uitgenodigde persoon** gelden.

Stel bijvoorbeeld dat de vragenlijst gericht is aan P. Janssen, geboren 02-10-1993. De moeder van P. Janssen vult de vragenlijst in met de gegevens over haar zoon. Dan ziet het voorbeeld er als volgt uit:

3. Wat is de geboortedatum van uw kind? 0 2 (dag) 1 0 (mnd) 19 9 3 (jaar)

4.Wat is het geslacht van uw kind?
1 ■ man
2 □ vrouw

Dit geldt voor het invullen van alle vragen in de vragenlijst.