



# The Drugs Information and Monitoring System (DIMS)

## Factsheet on drug checking in the Netherlands

### Introduction

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Is drug checking a valuable tool to reduce the harm of drug use? In many countries this is still an ongoing debate, one often hampered by lack of empirical evidence and practical experience. In the Netherlands, government-licensed drug checking has occurred for over the past two decades and has grown from a small scale project into a nationwide scientific monitor.

As one of the world's oldest drug checking services, the 'Drugs Information and Monitoring System' (DIMS) can provide advice and insight from lessons learned on how to set up and operate a drug checking service to all international collaborators, many of whom are taking their first steps in providing national drug checking programs.

This factsheet offers an overview of the history, organisation, common practice and strategies for warning campaigns of DIMS, and aims to serve as an objective insight into the ins and outs of drug checking as being executed in the Netherlands. While political and public opinion on the subject differs from country to country, sharing information will have its value for public health for certain.

#### In this factsheet:

- History of drug checking in the Netherlands
- Organisation of DIMS
- How drug checking in the Netherlands works
- When and how a warning campaign or Red Alert is issued
- Frequently Asked Questions
- What has drug checking by DIMS brought the Netherlands?

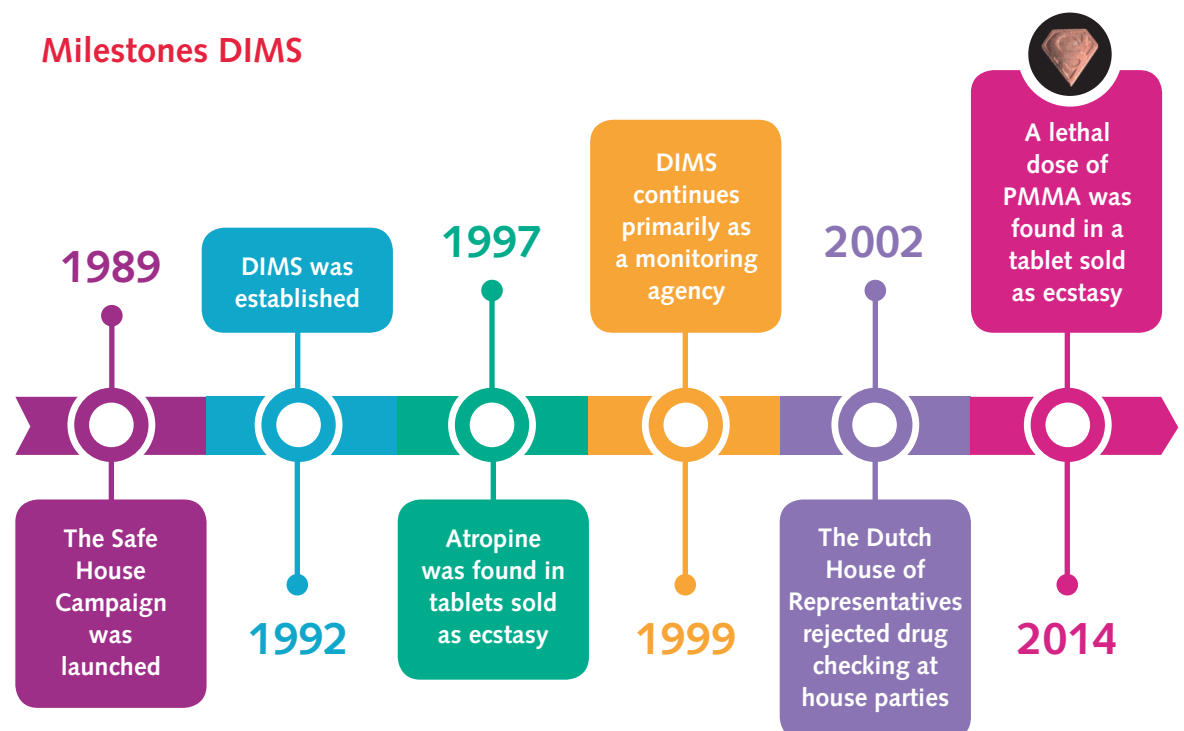
## History of drug checking in the Netherlands

Drug checking in the Netherlands dates back to late 1980s, as a natural response to the emergence of the use of club drugs, such as ecstasy (MDMA) at so-called 'raves' or 'house parties' (Brunt and Niesink, 2011). In 1989, the "Safe House Campaign" was launched by August de Loor's Drug Consultation Bureau. This campaign provided a variety of harm prevention activities, ranging from general safety recommendations for organisers of house parties, to the training of first-aid volunteers and providing harm reduction information for users. Not long after the start of this campaign, De Loor started providing a drug checking service to inform users about possible hazardous substances in drugs, both at offices around the country, and at house parties (Spruit, 1997). This service was received with great enthusiasm by the consumers of these drugs at the time. There was little known about the 'new' types of drugs that were emerging, their associated risks, as well as the people using those substances (Brunt and Niesink, 2011). Drug checking was seen as an intervention to reduce the risks of drug use, by assessing the content of tablets sold as ecstasy, and by educating people about drugs and suggesting safer ways of using them (Korf et al., 2003). In exchange for information about the composition and dose, people could hand in their samples for

monitoring purposes. At the time, it was considered a win-win situation for all parties involved.

In 1992, the Drugs Information and Monitoring System (DIMS) was established, to coordinate existing drug checking initiatives and to monitor the nationwide presence of illicit drugs. Regional institutions, working in the field of addiction care and drug prevention, were invited to join the network (Spruit, 1997). This was an important step since from then on it became possible to reliably monitor the dynamic and rapid changing drug market and inform users that would normally not be reached on a national level via DIMS. The Drug Consultation Bureau and Safe House Campaign primarily reached consumers attending larger house parties. Also, at the time, additional data from other sources, such as police and population studies, appeared to be insufficient to adequately monitor the drug market in such a way that it would provide similar valuable information for policy makers (Evaluation Dutch Drug Policy, Trimbos Institute, 2009). From that point onwards, all drugs handed in by users designated for laboratory analysis were sent to DIMS, allowing all test results to be centrally collected and stored in a database controlled by DIMS.

### Milestones DIMS



In the years that followed, the popularity of ecstasy use continued to increase. At the same time, also the market continued to remain very unstable with a peak in 1997, when on average only one third of the tablets sold as ecstasy actually contained MDMA and in October 1997, atropine was found to be present in many tablets (Spruit, 1999). Increasingly, growing numbers of novel drugs were appearing. In response, the European Early Warning System for Synthetic Drugs (EWS) was set up by the European Union in 1997.

Two years later, in 1999, the Dutch Ministry of Health decided to reconstitute DIMS primarily as a monitoring agency. The prevention of drug use was left to drug prevention departments of institutions of addiction care. The reason for this was that the government wanted to avoid an encouraging signal of recreational drug use by allowing drug checking, but acknowledged the importance of drug checking for public health. DIMS was reorganised, and (new) protocols were introduced. The same year saw the

conclusion of the Safe House Campaign, and with that, the cessation of on-site drug checking. (Korf et al., 2003).

In 2002, the Dutch House of Representatives passed a motion that explicitly rejected testing at house parties and other events with the argument that on-site drug checking at house parties would be misused to legitimate the use of ecstasy (Motion member Van de Camp, 22 January 2002). This decision was taken on the basis of a study on the efficacy of pill checking for monitoring purposes in different (existing) settings including office-based drug checking (with extended opening hours), in mobile facilities (a pill checking bus at parties), or checking drugs after being seized by security staff (Korf et al., 2003). (See also: *FAQ Wouldn't it be good to return to drug checking at parties?*).

Since then, the structure and function of DIMS has remained largely unchanged.

## Organisation of DIMS

DIMS consists of a network of office-based drug checking facilities across the country, coordinated by the DIMS-bureau, which is embedded within the Trimbos Institute in Utrecht and funded by the Ministry of Health (VWS), who is the commissioner of the project. The DIMS-bureau reports to the Ministry of Health via the Supervisory Committee. (See also the organisational chart). The members of the DIMS Supervisory Committee are appointed by the Ministry of Health. They are tasked with assessing the quality and the organisation of the activities within the framework of DIMS. The committee also needs to approve of any data gathered by the DIMS-bureau prior to release, e.g. for academic publication, policy reports, or to share with collaborating institutions, such as the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA).

*"Drug checking is an essential tool for agencies involved in the prevention of harm, providing the opportunity to contact recreational drug users not generally seen at other services".*

As of Spring 2019, the network consists of 31 drug checking facilities in 29 cities, hosted usually by institutions for addiction care and drug prevention.

The organisational costs for hosting a local drug checking service are financed by the individual local municipalities. In Amsterdam, the municipal health service, and the harm reduction service 'Mainline', also host drug checking facilities.

While monitoring of the drug market and identifying possible additional health risks is the main objective of the DIMS-bureau, the main goal of the individual, local drug checking facilities is to communicate with potential drug users for prevention and harm reduction purposes. An important part of the practice of drug checking is that it should always involve a consultation about risks and effects of the substance submitted, with the individual submitting the substance, and if indicated, subsequent referral for further management, including treatment. Drug checking is an essential tool for agencies involved in the prevention of harm, providing the opportunity to contact recreational drug users not generally seen at other services.

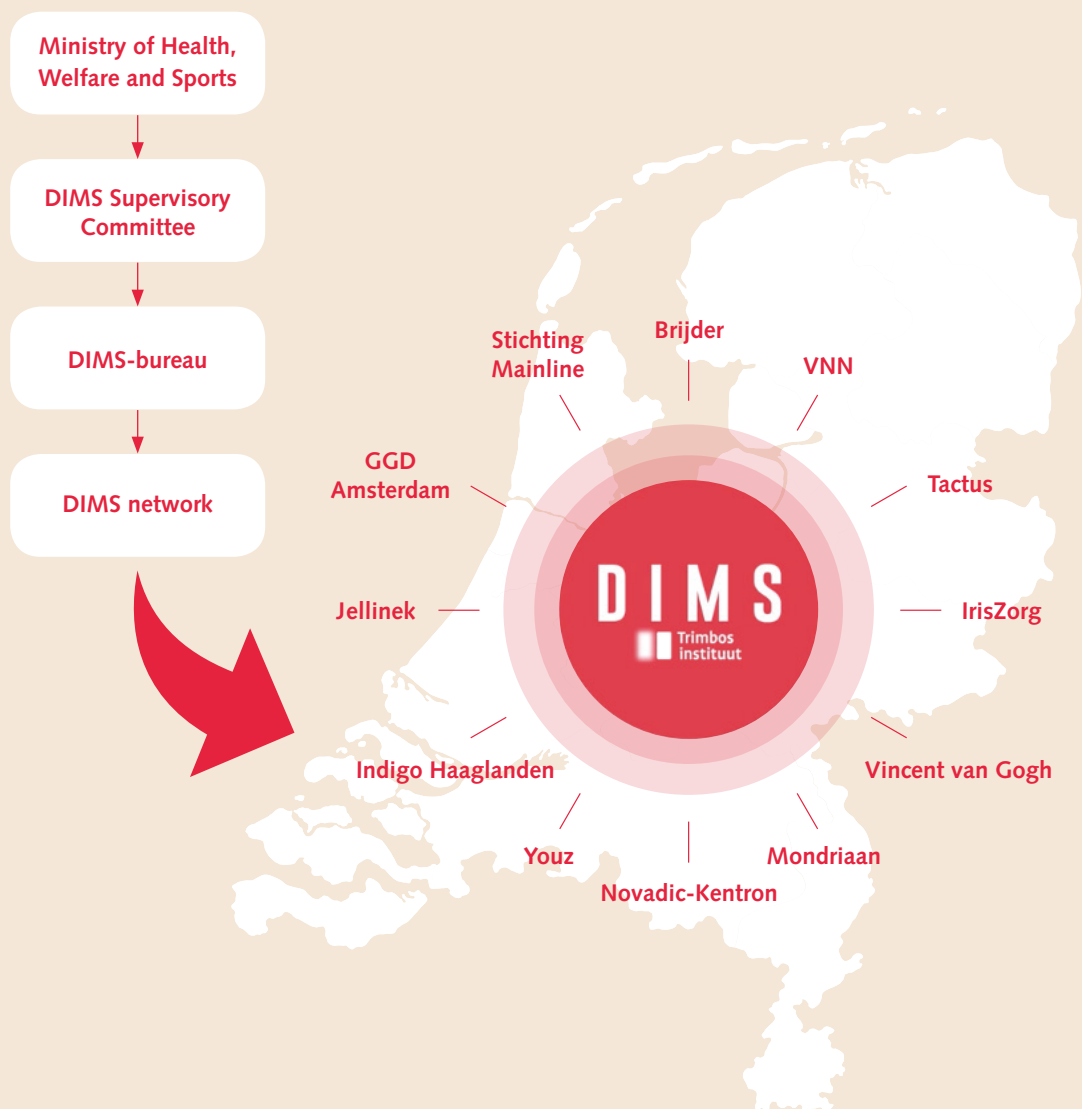
To ensure quality, Good Testing Practice (GTP) protocols have been developed, to guarantee consistency between all drug checking facilities. These protocols include descriptions of the responsibilities and the quality requirements of working with illicit and psychoactive substances, how to ensure anonymity of the consumer, standard operating procedures for protection and safety when handling drug samples, how to unroll a warning campaign, and how to deal with the media.

Since the work includes the handling of illicit substances, specific arrangements have been made with national and local authorities to legally do so. In the Netherlands, an official agreement with The Netherlands Public Prosecution Service ensures that anyone possessing illicit drugs attending a drug checking service will not be arrested or prosecuted (College van Procureurs-Generaal, maart 2002, reg.nr. 20021004).

Furthermore, each of the network member institutions, as well as the DIMS-bureau, must be in possession of a waiver of the Opium Act, which must be requested from the Health Inspectorate. Any prospective drug checking facility must be visited and approved by this authority (as well

as the DIMS-bureau) prior to a waiver being granted. While the Health Inspectorate focuses mainly on how the illicit substances are stored and registered, the DIMS-bureau also looks at how issues such as privacy and anonymity are assured according to protocol. When granted, the waiver enables a drug checking facility to handle, store and transport drug samples for research purposes under strict regulations, including a fixed safe to store drug samples. Finally, conclusive tracking and administration ensures that any specific drug sample can be tracked at any time.

### Organisational chart DIMS network





## How drug checking in the Netherlands works

As discussed, specific agreements exist within the Netherlands that enable drug users to hand in drugs for analysis anonymously, discretely, without the risk of being arrested or prosecuted, and usually free of charge, at office-based locations. Specifically, users are allowed to bring 3 tablets, capsules or blotters, 1g of powder or 10ml of liquid for testing purposes; however, the budget allows for only one sample per person to be sent to an external laboratory for a full analysis.

Drug checking in the Netherlands is available for users of both traditional recreational drugs, as well as emerging Novel Psychoactive Substances (NPS). Prescription drugs, even when they are bought illegally, are not analysed, since they do not lie within the scope of the existing monitoring system. Since DIMS monitors the Dutch drug market, in principle only drugs bought in the Netherlands are analysed. Exception to this rule is samples bought on the internet. Internet samples are accepted and analysed by DIMS, also in case the exact vendor location is not known, which is often the case.

Only certified testers, educated by the DIMS bureau, and under supervision of the project coordinator from one of the participating network members, are allowed to handle drug samples. In practice, those who test drugs are often supported by 'peer educators'.

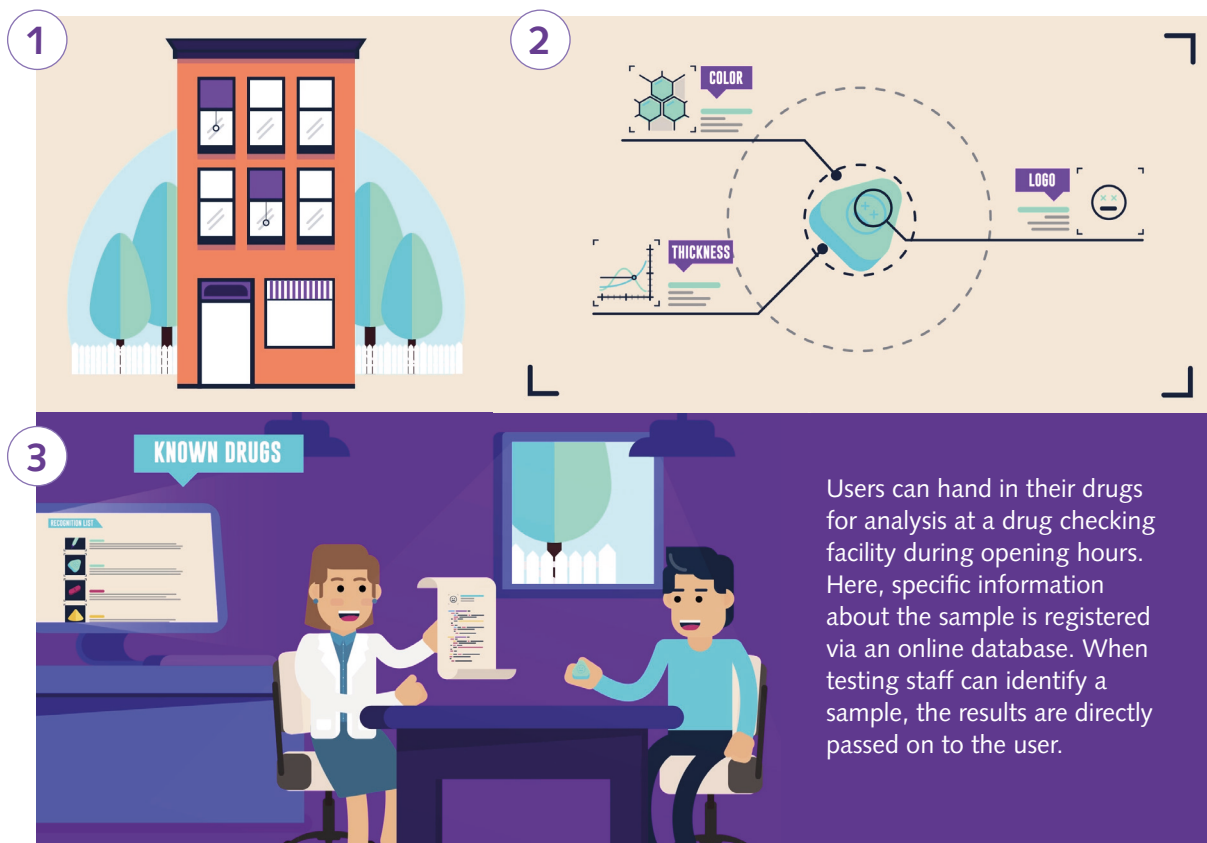
These peer educators assist the certified testers, e.g. in informing the visitors about general effects and risks of the drug they submitted.

### Office-based drug checking

DIMS runs two types of drug checking facilities. The vast majority of services are drug checking facilities where testing staff, at least two testers, are available for a few hours, on a weekly basis. They may directly be able to identify some of the submitted tablets. This is referred to as 'office testing'. The other services can be visited by appointment to hand in samples for submission directly to the DIMS-bureau; at these facilities, no checking at all takes place. All samples submitted in this latter way will be sent by envelope, and accompanying letter, to the DIMS-bureau in Utrecht.

Subsequent to submission, specific information concerning any sample is registered via an online database, accessible to all drug checking facilities. Specifically, the following information is requested:

- date of purchase
- what substance the sample has been 'sold as'
- where it was bought from (geographic area or where on the internet)
- price
- intended setting in which the sample will be used.



Other important information recorded is whether the substance has already been used, and if so, what the effects were, and if they were as expected, and finally, if one wants to have the samples sent to the laboratory anyway and why.

To identify tablets, the external characteristics are first measured and registered. This includes the diameter, thickness, weight, color, presence of a groove, whether single or double, light or dark speckling (if present), and any logo visible and its profile.

After this, a Marquis reagent test is performed to indicate the presence of any of the common recreational drugs such as MDMA, amphetamines or 2C-B. This information is then combined to check an online database that is updated weekly by the DIMS-bureau. The database matches information of the tablet with similar tablets that have been recently analysed in the laboratory (at least twice in the last 10 weeks, and a third time in the last 3 months and sent in by more than 1 drug checking facility).

***"The DIMS-bureau or drug checking services cannot be held liable for any health issues arising from substance use".***

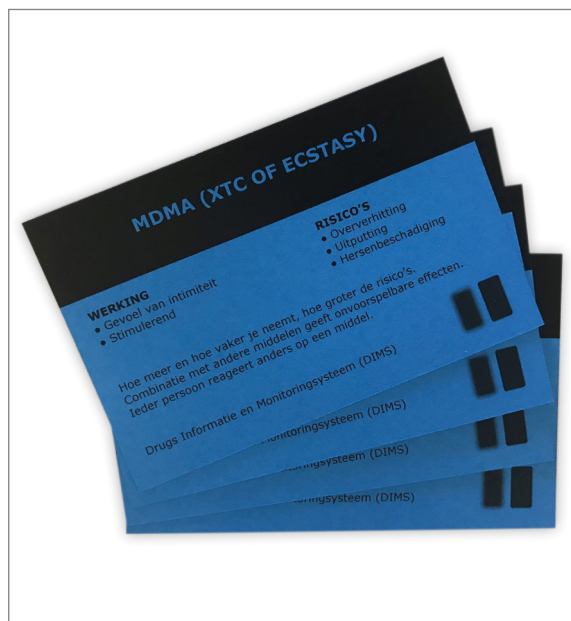
Because of the frequency of input of information on substances (weekly), and because of the fact that tablets are usually produced in large batches, certain tablets can be reliably determined and identified through a database via the "determination list". Each year, this determination list is validated by sending between 1-3% of already identified tablets for laboratory analysis.

The determination list usually contains around 50 tablets of various compositions, mostly MDMA, but also 2C-B or 4-FA. When a specific tablet can be identified, information about its composition and dose is passed on directly to the individual that submitted the tablet, and the tablet will be returned to that individual. The Opium Act waiver allows drug checking staff to handle the samples.

Tablets that cannot be identified by this 'determination list', as well as other substances such as powders, blotters or liquids, can then, upon request of the person submitting the sample, be sent to the DIMS-bureau at the Trimbos Institute in Utrecht for further analysis.

In that case, the user receives a card consisting of a unique sample number, a phone number to be called to obtain the test results one week later, and also additional general information and risks of the substance handed in. Also, this card contains a disclaimer, reiterating that drug use is never safe, even if one is 'satisfied' with the results of

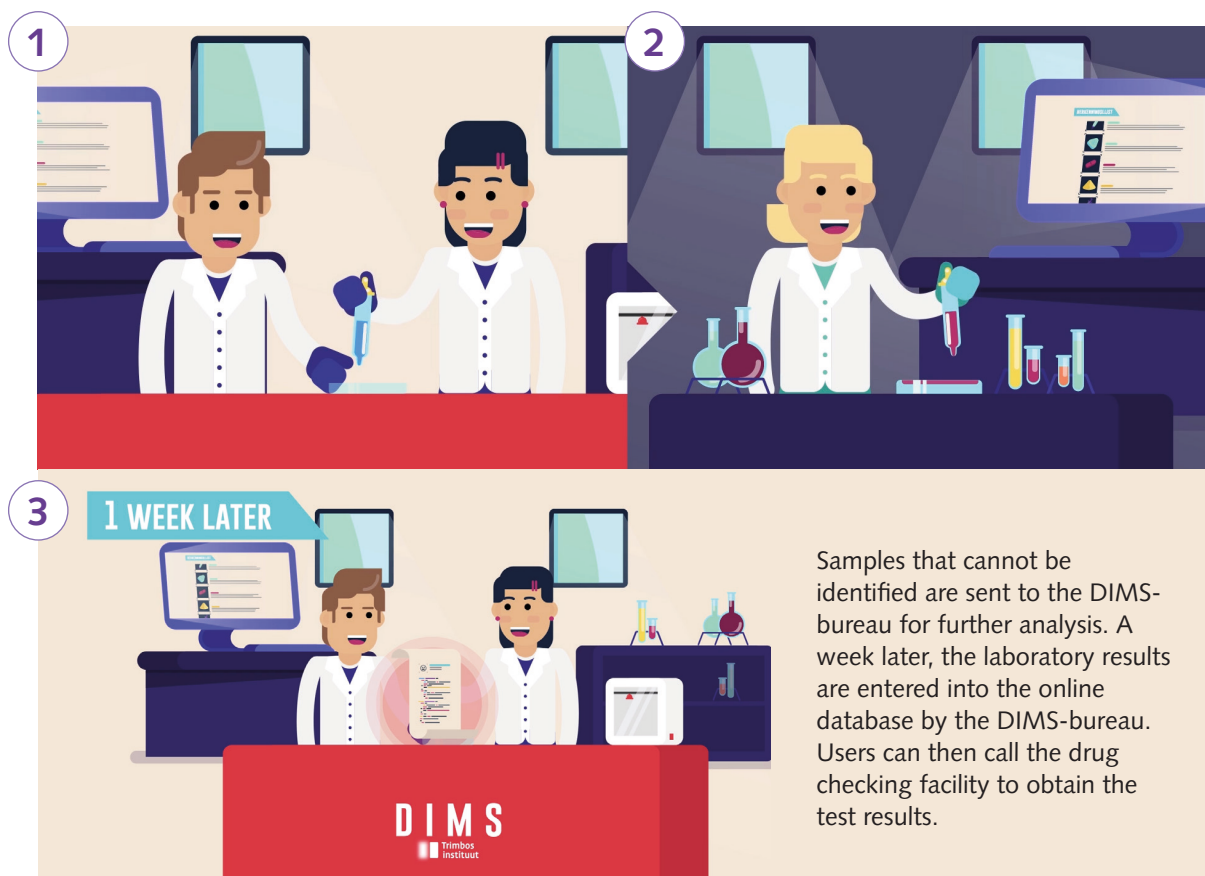
the analysis. The DIMS-bureau or drug checking services cannot be held liable for any health issues arising from substance use.



Since DIMS primarily monitors the drug market at a user level, information about the composition of a sample is exchanged primarily with users. Several safety measures are in place to prevent dealers, producers or others (e.g. parents, journalists etc.) misusing this service for their purposes. When the results are communicated by phone, this is also registered in the online database, so that results cannot be also requested by others. Results concerning precursors are never shared, because this might be useful information for producers of illicit drugs.

#### **Further analysis at the DIMS-bureau**

Most of the 200-250 samples handed in every week to the drug checking services in the country cannot be determined on-the-spot, at the point of submission. They will be forwarded on to the DIMS-bureau. At the DIMS-bureau, all samples received are registered, and in case of tablets, also photographed. All samples are carefully re-examined to confirm the 'determination' that was done by the drug checking facilities in the country. By doing so, a further 10-20% of the tablets can additionally be identified, by using a larger database of tablets received in the preceding 20 years, which is not available to the drug checking facilities. This database currently contains over 150,000 unique tablets, along with their main characteristics.



Powders containing MDMA, amphetamines, caffeine, ketamine or 4-FA, but also liquids sold as GHB, can currently be reliably analysed by using Fourier Transform Infrared Spectroscopy (FTIR). By using unique reference standards, these samples can also be quantified with a 10-15% reliability range, depending on the substance. In case of LSD blotters, an Ehrlich reagent is used for an indication. Because lab analyses for LSD are costly and since DIMS has a quota (based upon our available budget), only a limited number of samples can be sent to the laboratory for quantitative analysis. Therefore, using an indication such as Ehrlich reagent is a way of still giving users a result without draining the budget.

All other samples that cannot be identified, or for which qualitative analysis is requested, are then coded, packaged and transported to a specialised laboratory for full chemical analysis. On average, a total of 130 samples per week are analysed by this laboratory. Here, samples undergo both qualitative and quantitative analysis within 24 hours, using gas chromatography mass spectrometry (GC-MS) and liquid chromatography diode array detection (LC-DAD).

Once the results are interpreted and registered in a specific computerised database, these results become available to the drug checking facilities in the country. In general, the process of submitting a sample and getting back the results takes one week. Drug checking facilities can then read their results for a period of 8 weeks after which they become inaccessible. This is for privacy reasons.

As mentioned, a weekly quota of 130 samples can be sent to the laboratory for monitoring purposes. However, the DIMS-bureau receives many more samples than that every week. A number of these (superfluous) samples can be identified at the DIMS-bureau. Moreover, the drug checking locations in the country are required to prioritise samples that in their opinion should be fully analysed in the laboratory. This is done when for example people report adverse health events after having consumed the sample, the color of the Marquis test is suspicious, or if young persons are involved who are going to use drugs for the first time. By doing so, the most urgent samples can be sent to the laboratory, but the reality is that regularly people have to be disappointed whose sample cannot be analysed, and therefore will be destroyed by the laboratory. They will not be returned to those who have submitted the sample.

## Red Alert

A Red Alert is a national, regional, or local warning that is issued as soon as 'extra hazardous' drugs are found in circulation. The warning is issued by DIMS on behalf of the Minister of Health.

Three situations can provoke a Red Alert.

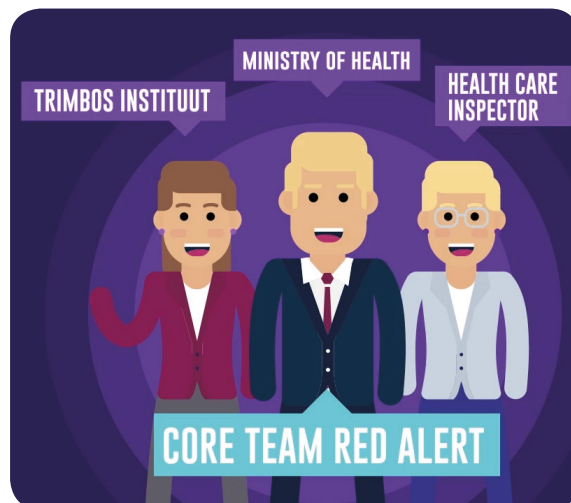
1. When drugs with a serious health risk have been offered and identified at one of the drug checking facilities.
2. When the police or National Forensic Institute (NFI) find hazardous drugs.
3. When local medical authorities report serious incidents with drugs.



When such a situation occurs, the first step is to collect as much information as possible on: where the drugs were initially offered at one of the drug checking facilities, (additional) information about effects, possible health incidents, where the sample is bought and where it might have been sold or distributed. This information will be obtained from the user that provided the sample and usually has to be collected in a very a short window of time. A specific protocol has been made for this purpose.

Risk analysis of the substance found in the drug sample is performed not only based on chemical analysis and user information, but also on literature research and expert consultation from other sources such as the police or NFI, the National Poisons Information Centre (NVIC) and the Monitor Drug-related Incidents (MDI). The MDI is also a monitoring system embedded within the Trimbos Institute and collects information on presentations with drug-related acute toxicities at four medical services including ambulance services, emergency departments of hospitals, forensic medicine services and first aid stations at large scale dance events in eight regions of the Netherlands. At an international level, information is shared through the EMCDDA's Early Warning System (EWS).

Once all relevant information is collected, the National Core Team Red Alert assesses the situation. This core team consists of representatives of the Ministry of Health, the Health care Inspectorate and the DIMS-bureau. They are responsible for the risk assessment and to which degree a Red Alert eventually will be unrolled.



The National Core Team Red Alert then has several options, depending on the severity and scope of the situation:

1. **An internal release**, in which only the participants of the DIMS network and the medical authorities that are part of the MDI are informed.
2. **A regional or local warning**, in which all listed local authorities are also informed by the coordinators of the DIMS network.
3. **A national warning**, which communicates its warning through a wide variety of channels such as press releases and flyers.



Since 2016, a Red Alert app is available for smartphones ([www.drugsredalert.nl](http://www.drugsredalert.nl)). When a Red Alert is issued, users who have downloaded the app will receive a warning (push message) immediately. The app (and the DIMS website, [www.drugs-test.nl](http://www.drugs-test.nl)) also maintain a regularly updated list of tablets, considered particularly hazardous, but not meeting the criteria to justify a Red Alert (e.g. because of wide spread distribution of a batch, which might contain as yet unknown substances).



Based on the advice of the National Core Team Red Alert, the Minister of Health decides when the Red Alert can be initiated, and also when it can be ended. All procedures and responsibilities are agreed upon in a national protocol. Implementation of a Red Alert is done by the regional partners of DIMS, and they too have their own regional protocols. All Red Alerts are extensively evaluated, once ended.

In practice, an internal release is issued several times a year. Regional or local warnings, and national warnings occur more infrequently. Since 1999, a total number of four national warnings have been issued. To ensure the impact of a Red Alert, these larger scale warning campaigns are only issued when serious outcomes have been reported or are expected. Examples include the occurrence of a large batch containing a potential lethal dose of a substance, or when several severe incidents have taken place after using a hazardous drug. During these warning campaigns, an increase in visitors to drug checking facilities can be observed, suggesting that these warnings increase awareness among drug users.

### Pink Superman Pill



In December 2014, when tourists were about to descend on Amsterdam for the Christmas holidays, the DIMS-bureau received the laboratory results of a pink tablet containing a Superman logo. This tablet contained no MDMA at all, but instead 173 mg of PMMA (para-methoxymethamphetamine), a potentially lethal dose.

Not long before that, DIMS had received further information about the existence of a very large batch, of the same composition, elsewhere. That day, the national core team Red Alert was assembled and a national warning or Red Alert was issued by the Minister of Health. Only one day later, a full Red Alert mass media campaign was launched. The message- "Please don't take this tablet"- was issued through all media platforms: TV, radio, newspapers, the internet and mobile phone networks, together with a clear picture of the tablet. There were no reported incidents in the Netherlands; however several deaths related to this tablet did occur in the United Kingdom over the next fortnight.





## Frequently Asked Questions

### Does drug checking save lives?

It is scientifically very difficult to conclude with certainty that “drug checking saves lives”. People can also die after taking a ‘normally dosed’, lab tested ecstasy tablet (Vanden Eede et al., 2012). To investigate the efficacy of drug checking systems, a controlled experiment would be required, which is simply impossible, given the variables involved. Drug checking is an exercise in harm minimisation, and within DIMS, it is evident that it is an intervention that clearly reduces the risk of drug-related harm (see the Pink Superman Red Alert for example). It is known from surveys among people submitting samples, as well as recent research by Measham et al. (2018), that people tend to follow up on a negative advice, meaning when it is advised not to take the specific tablet, people tend to listen to this. They may use fewer drugs, be less likely to use ‘cocktails’ of drugs, or might even choose to not use a drug at all depending on the results, and the advice given.

*“A DIMS tester will never say: “your ecstasy tablet only contains MDMA in a ‘moderate’ concentration, so it is safe to use”.”*

For consumers, being informed that a specific substance is particularly risky, is usually enough to discourage the use of that substance. In simple terms, with other options available, why would anyone take a substance that experts have broadly advised is significantly associated with severe adverse health events? In summary, one can reasonably say that drug checking contributes to the reduction of drug-related health problems, but as long as people use drugs, there will be drug-related deaths or emergencies, regardless of whether or not consumers have had their substances analysed or not, since drug use is never without risks.

### Does drug checking promote drug use?

Drug checking, conducted as a formal, tightly regulated, health-driven process, as carried out by DIMS, is set-up not to promote drug use. Firstly, DIMS never provides an endorsement of quality: all drug use involves risks, even if the tablet or powder only contains just the substance anticipated when purchased. This over-arching message is paramount, when communicating the laboratory results to the person that submitted the sample. DIMS testers are educated in how to deliver a prevention message and frequently advise consumers to refrain from taking the drug when the tested sample does not contain the substance that it was sold as, or

if it does contain the substance but also other compounds, similar in nature or even more harmful. A DIMS tester will never say: “your ecstasy tablet only contains MDMA in a ‘moderate’ concentration, so it is safe to use”. In addition, young visitors (under 18), as well as more vulnerable people suffering from mental health problems, or who are susceptible for addiction, are advised not to use, or at least to lower their drug consumption. It has been known for many years from previous research that drug users who use the services of drug checking facilities do not use more drugs than drug users who do not (Brunt 2017).

### Wouldn't it be good to return to drug checking at parties?

For drug checking facilities to be (again) provided at parties or festivals in the Netherlands, under the current framework, a number of issues would need to be considered.

1. Every festival site would require a waiver of the Opium Act, as is the case now for the existing drug checking facilities, and for every time the festival was held. The organiser of the event must request a waiver, with the associated costs. The Health Inspectorate must then inspect the testing location.
2. Only certified DIMS testers are allowed to test drugs, and currently their number falls well short of that required to serve all festivals and parties.

Moreover, one of the major benefits of drug checking as conducted by DIMS, includes the opportunity to provide information about the risks of drug use and the composition and risks of the drugs submitted for testing, in a quiet environment, where that information can be properly assimilated. Less time is available for this at a major event. The large numbers of people wanting to have their drugs tested in a short time period can result in long queues, with little time for the provision of (preventive) information. In addition, to properly inform users about 1) the presence or absence of an active ingredient, 2) the dose and 3) the presence or absence of other hazardous substances, an extensive chemical (for example GC-MS) analysis is required. However, this is very expensive, time consuming and requires highly qualified testers on location.

### Can users trust online information on ecstasy tablet content or other drugs?

While the results of samples analysed at DIMS are strictly personal and forbidden to be further communicated by users, e.g. via social media or the internet, qualitative and quantitative results of ecstasy tablet content and other drugs are often found online, on designated websites or forums.

Even though this information often appears to be genuine and derived from laboratory results, research by DIMS has shown that around 15% of the information displayed on such websites can lead to dangerous misinformation on tablet content, either because of a significant underestimation of the dosage, or the presence of an altogether unreported substance (Vrolijk et al., 2017). In addition to these potentially dangerous misrepresentations, almost 40% of information found online overstates the dosage of MDMA in ecstasy tablets, leaving a minority of information which is actually accurate. It should be emphasised that this high level of inaccuracy is not necessarily malicious, or does not derive

from deliberate dishonesty by the providers of this information. Instead, it is a consequence of an incredibly complex and fast-moving drug market. Differences between batches of tablets are often subtle, even indistinguishable, from just an online photo, let alone from a textual description of the tablet characteristics ("Pink Superman"). Even though information might be shared with the best intentions, it leads to dangerous misinformation for those researching online for their tablet content. DIMS therefore always advises people to have their drugs tested and, if this option should be unavailable, to resort to the aforementioned Red Alert App, as a validated source of information.

## What has drug checking by DIMS brought the Netherlands?

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Since 1992, DIMS evolved from a small scale drug checking project into a systematic nationwide monitor, making it a very useful tool for both scientific research, public health, as well as policy making (See also; *Other key publications of DIMS*). Because of its clear structural organisation, protocols and close collaboration with other stakeholders, the

network can respond very rapidly and efficiently when a hazardous substance is detected. In addition, by embedding it in institutions for addiction care and drug prevention, it is an efficient tool for harm reduction towards a group of users which might otherwise remain invisible and therefore not reached.

## References

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Brunt, T. M. and Niesink, R.J. (2011), The Drug Information and Monitoring System (DIMS) in the Netherlands: Implementation, results, and international comparison. *Drug Test. Analysis* 3, 621-634.

Brunt, T.M. (2017), Drug checking as a harm reduction tool for recreational drug users: opportunities and challenges. Background paper commissioned by the EMCDDA for Health and social responses to drug problems: a European guide. EMCDDA: Lisbon.

Korf, D.J. Benschop A. and Brunt T.M. (2003), Pillen testen in Nederland: een onderzoek naar de versterking van de monitor uitgaansdrugs. Rozenberg Publishers.

Measham, F. (2018), Drug safety testing, disposals and dealing in an English field: Exploring the operational and behavioural outcomes of the UK's first onsite 'drug checking' service. *International Journal of Drug Policy*, In press.

Sheldon T. (2019), Testing of illicit drugs in the Netherlands could be a model for the UK. *BMJ* 365, 11784.

Spruit, I.P. (1997), Ecstasy in the Netherlands. A summary of the results of six projects. Rijswijk: Ministry of Health, Welfare and Sports.

Spruit, I.P. (1999), Ecstasy use and policy responses in the Netherlands. *J. Drug. Issues* 29(3), 653-678.

Vanden Eeden, H., Montenij, L.J., Touw, D.J. and Norris E.M. (2012), Rhabdomyolysis in MDMA intoxication: a rapid and underestimated killer. "Clean" ecstasy, a safe party drug? *J. Emerg Med* 42(6), 655-658.

Van Laar, M. and van Ooyen-Houben M. (2009), Evaluatie van het Nederlandse drugsbeleid. Trimbos Instituut AF0884.

Vrolijk, R. Q., Brunt, T. M., Vreeker, A. and Niesink, R. J. (2017), Is online information on ecstasy tablet content safe? *Addiction*, 112(1), 94-100.





## Other key publications DIMS

Blankers, M., van der Gouwe, D. and van Laar, M. 4-Fluoramphetamine in the Netherlands: Text-mining and sentiment analysis of internet forums. *Int J Drug Policy*. 2019 64:34-39.

Brunt, T. M., Nagy, C., Bücheli, A., Martins, D., Ugarte, M., Beduwe, C., and Ventura Vilamala, M. (2017). Drug testing in Europe: monitoring results of the Trans European Drug Information (TEDI) project. *Drug Test. Analysis*, 9(2),188-198.

Van der Gouwe, D., Brunt, T.M., Van Laar, M. and Van der Pol, P. (2017). Purity, adulteration and price of drugs bought on-line versus off-line in the Netherlands. *Addiction*. 112(4):640-648.

Van der Gouwe, D., Rigter, S. and Brunt, T. (2018). Focus on cryptomarkets and online reviews too narrow to debate harms of drugs bought online. *Addiction*. 113(5), 798-799.

Van der Gouwe D., Rigter, S. (2017). Annual Report DIMS 2016. Product number: INFO24E.

Van der Gouwe D., Rigter, S. (2018). Annual Report DIMS 2017. Product number: INFO32E.

## Colophon

Trimbos Institute  
PO Box 725  
3500 AS Utrecht  
The Netherlands  
Phone: +31-30-2971100  
E-mail: [dims@trimbos.nl](mailto:dims@trimbos.nl)

**Authors**  
*Laura Smit-Rigter, Daan van der Gouwe*

**Advice**  
*All members of the DIMS team and  
Raoul Koning (Jellinek)*

**Thanks to**  
*David Caldicott for assistance on  
idiom and style*

**Design and production**  
*Canon Nederland N.V.*

**Animations**  
*de Clipjesfabriek  
(animations about DIMS and Red Alert)*

**Additional information**  
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**Product number:** AF1677

April, 2019

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