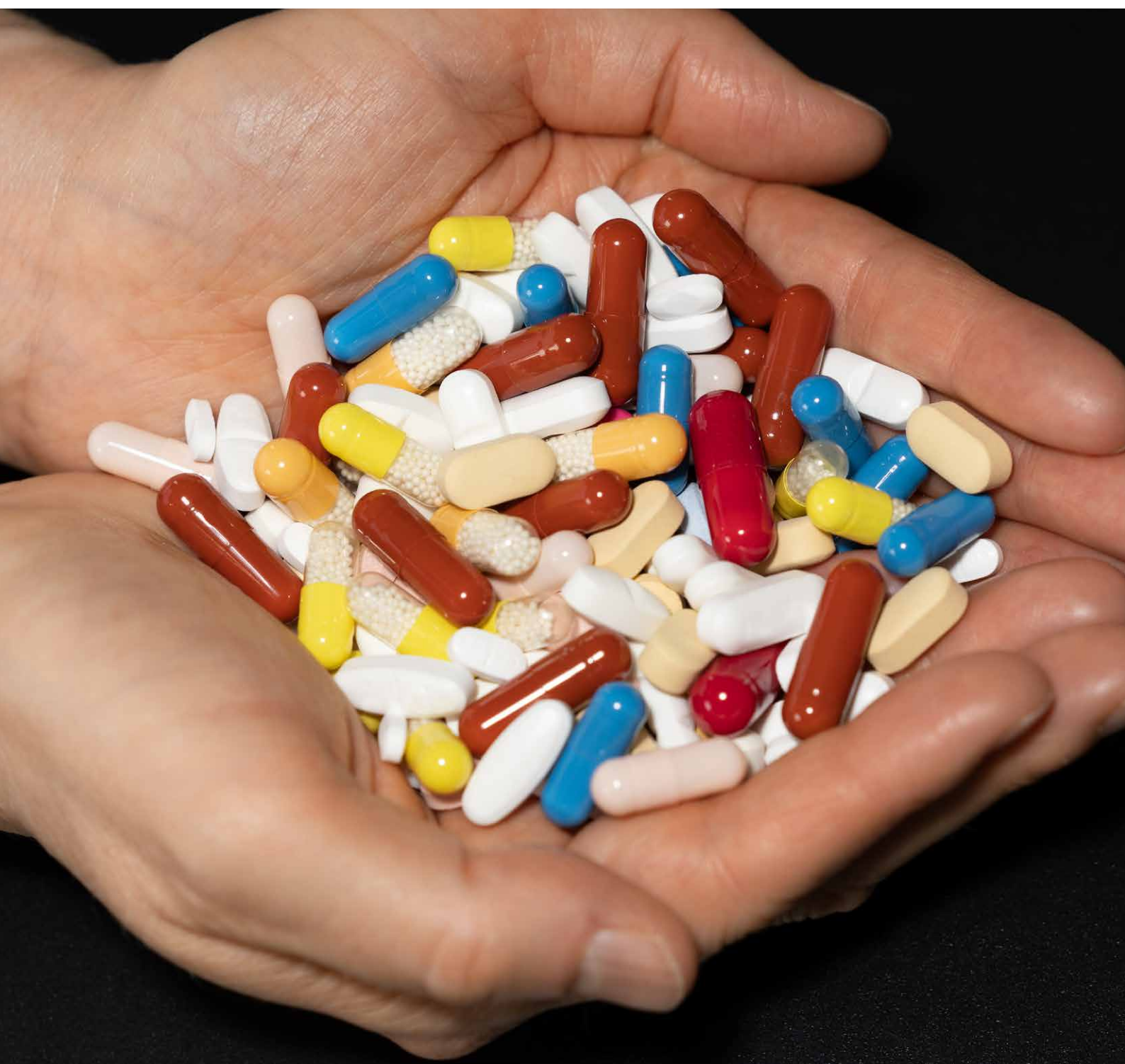


# Annual report 2020



**Tox Info Suisse is the proper address for private individuals, professionals, organisations and companies for all questions regarding poisoning.**

**Summary of the most important services:**

- Emergency hotline 145
- Information and advice related to poisoning for private individuals and medical professionals
- Consultations related to poisons (theoretical enquiries, tel. +41 44 251 66 66)
- Tox Info App (free of charge for iOS and Android)
- Documentation and treatment schemes
- Consultations and services for companies
- Risk assessment and expert opinion
- Poisoning prevention
- Veterinary pharmacovigilance
- Clinical toxicology training for physicians, accredited training site (Cat. B) for the specialization in clinical pharmacology and toxicology in Switzerland
- Research and education

**Cover:**

*Mix of different drugs – Tox Info Suisse, Zurich*

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Dear reader,

As always, many people in Switzerland sought assistance from Tox Info Suisse in 2020. A team of 40 employees responded 24 / 7 to about 40,000 enquiries on emergency number 145, even working under conditions made more difficult by the pandemic and at home in some cases. In addition, personnel changes at the management level in 2020 made this a year that signalled a key change in direction for Tox Info Suisse.

#### **New generation of management**

With the departure of Dr Hugo Kupferschmidt, who shaped this organisation for 25 years, it's the end of an era for the Tox Info Suisse foundation. As Director, he was instrumental in developing Tox Info Suisse into what it has become today: an internationally recognised poison centre with a competent and motivated team. He encouraged scientific publishing and promoted close collaboration and networking between those in the toxicology field. The Foundation Council and the staff of Tox Info Suisse would like to express their sincere thanks to Hugo Kupferschmidt for his long-term and exemplary commitment and wish him all the best for his new professional challenge.

At the same time, the Foundation Council is delighted to have Ms **Damaris Ammann** on board as new managing director with an excellent professional track record. The Foundation Council is also delighted that the current head physician, **Dr Cornelia Reichert**, has accepted the role of medical director.

#### **Handing over the baton in the Foundation Council**

Elisabeth Anderegg-Wirth, who has been a committed member of the Foundation Council since 2009, resigned as its chairperson in March 2021. Major milestones during her term include the signing of the Association Contract with the University of Zurich, the name change from «Swiss Toxicological Information Centre» to «Tox Info Suisse», the organisation's 50<sup>th</sup> anniversary together with a special stamp and the launch of the Tox Info app. She also implemented strategic analysis to ensure long-term financing and succession planning at the managerial level. The Foundation Council extends a warm thank you to Mrs Anderegg-Wirth for her long-term commitment and wishes her all the best and every success for the future.

We are delighted to have taken over the chair of the Foundation Council and the position of managing director of Tox Info Suisse as of 1 April 2021, and we are looking forward to working together with the Foundation Council and its dedicated staff. We are also looking forward to pursuing the new direction of Tox Info Suisse based on a sustainable and secured financing of the national poison emergency hotline 145.

Dr Hans Rudolf Keller  
Chairman

Damaris Ammann  
Managing director

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## Consistently high demand for toxicological expertise

In 2020, the core tasks of Tox Info Suisse remained telephone advice in toxicological emergencies and responding to questions about prevention. In addition, the broad expertise of our toxicologists was in great demand in many areas of the public and private domain.

In 2020 we received 39907 enquiries (+1.8% compared to 2019). More than two thirds (71 %) of the enquiries came from the general public, nearly one quarter (24 %) from medical professionals, and 5.4 % from other sources. The website was visited over 645000 times (+28 % compared to 2019).

Enquiries from the general public increased by a total of 6 % to over 28000 whereas there was a 6 % decrease in enquiries from hospitals to 6899. A fee has been charged for these consultations since 2015. Enquiries from other medical professionals also dropped, which is primarily due to a significant decline in the number of enquiries from veterinarians who have been charged a fee since April 2019.

### Experts on duty

In addition to its emergency telephone service, Tox Info Suisse compiles expert reports and case analyses for industry and authorities. Senior medical staff regularly carry out clinical toxicological consultations on the wards and emergency department of the University Hospital of Zurich. Tox Info Suisse also provides emergency medical advice outside office hours for the pharmaceutical industry as well as hotline support related to material safety data sheets. It also performs emergency unblinding in clinical trials. In addition, the experienced staff of Tox Info Suisse responded to various press enquiries.

### Active role in the Swiss antidote network

Mandated by the Swiss Conference of Cantonal Ministers of Public Health (GDK), Tox Info Suisse ensures antidote supply in Switzerland in

collaboration with the Swiss Association of Public Health Administration and Hospital Pharmacists (GSASA) and the Swiss Military Pharmacy. Tox Info Suisse also updates the Swiss antidote list and publishes monographs and leaflets on antidotes.

### Education

As lecturers at the universities of Zurich, Basel, and Geneva, H. Kupferschmidt and S. Weiler helped train students. Academic staff at Tox Info Suisse regularly give lectures in clinical toxicology as part of postgraduate courses and for the continuous education of doctors, other healthcare professionals, and professional organisations. Structured, weekly training sessions are also held for the staff of Tox Info Suisse as well as the Institute of Pharmacology and Toxicology of the University of Zurich.

### Scientific activities

As part of its association with the University of Zurich, researchers conducted projects under the guidance of S. Weiler. The research efforts focused primarily on toxicology and dose-response relationships in human poisoning. Part of this work was performed in the context of medical theses and the research results were presented at national and international scientific conferences. Publications are listed on page 22 as well as on the website.



for iOS (Apple Store)



for Android (Google Play)

The Tox Info App was created in 2015 and has been developed with the support of the Swiss Federal Office of Public Health (FOPH). It provides advice on first-aid measures, explains the hazard symbols for chemical products and presents news in the domain of human toxicology. To make it easier to identify noxious agents, EAN barcodes and photos can be sent directly to Tox Info Suisse using the app when calling the emergency hotline 145. Downloading the Tox Info App is free of charge for iOS and Android in Switzerland and neighbouring countries.

## Drug abuse

Some prescription and over-the-counter drugs are abused because of their intoxicating effect. These are generally medicines that contain active ingredients with a stimulating or calming effect on the central nervous system (CNS) and include: benzodiazepines, opiates, medications used for attention deficit and hyperactivity disorder (ADHD), gabapentinoids such as gabapentin and pregabalin, and also antitussives containing dextromethorphan. The following two paragraphs only analyse drug abuse and do not include attempted suicide.

### Benzodiazepines

Benzodiazepines are medicines that are used to treat states of anxiety, excitement and tension, sleep disorders and epilepsy. Because of their broad scope of application these drugs are the most commonly prescribed psychotropic drugs and their regular use can lead to dependence. Intentional misuse (abuse) of benzodiazepines has been a rising trend across most of Europe (1). Tox Info Suisse has also received an increasing number of enquiries related to the abuse of benzodiazepines. A case evaluation conducted over the past five years, where a benzodiazepine was the main agent involved, has shown that the number of cases has more than doubled from 28 to 64 per year (see figure). The number of cases among teenagers and young adults (up to 25 years old) has seen a marked absolute and relative increase. In two thirds of these cases, several substances were used simultaneously, primarily

alcohol, illegal drugs, other benzodiazepines, and drugs that affect the CNS.

Alprazolam (Xanax®) was the agent mostly used in these cases. This benzodiazepine was abused in more than a third (35%) of all cases and in half (51%) of the cases among young adults. Counterfeit medications are often sold on the black market under the name Xanax. When analysed, these fake drugs often contain active substances other than alprazolam, for instance etizolam, flualprazolam or flubromazolam (2), also referred to as «designer benzodiazepines», which are not authorised in Switzerland and have not been clinically tested for human use at all. The effect of designer benzodiazepines is comparable with that of other benzodiazepines (3).

### Opiates, ADHD medications and antitussives

During the period 2016–2020 Tox Info Suisse registered 505 cases of acute drug abuse, some of which involved a single agent. An opiate/opioid was involved in 104 cases, ADHD medication and antitussive dextromethorphan in 61 cases each (see figure).

Methadone, morphine, oxycodone and codeine belong to this group of opiates/opioids. The dependence potential of these drugs is strong, and severe or even fatal clinical courses are described in the literature. Besides, withdrawal symptoms can be quite severe. The medications used in the

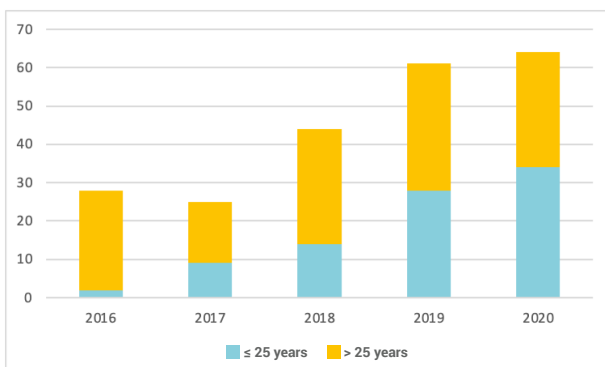


Fig.: Abuse of benzodiazepines – number of cases per year

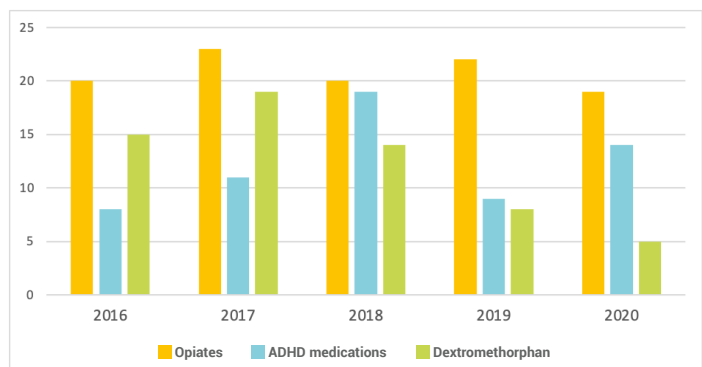


Fig.: Abuse of opiates/opioids, ADHD medications and dextromethorphan – number of cases per year



07

treatment of ADHD were mostly preparations containing methylphenidate or dexamethylphenidate. These drugs have performance-enhancing and stimulating effects and they are often used to boost mental performance at work or in school (4). If taken in high doses the antitussive agent dextromethorphan can lead to hallucinations and change a person's perceptual awareness.

The age of the patients was known in 414 out of 505 cases of drug abuse. The age ranged between 12 and 81 years old (median 30 years old). Two thirds of the individuals (270/414) were younger than 36 years. This age distribution is also described in another Swiss study (5). Teenagers and young adults frequently abuse dextromethorphan, as this substance is cheap and freely available in pharmacies. Severe symptoms are hardly ever observed.

### Gabapentin and pregabalin (gabapentinoids)

Gabapentin and pregabalin are agents used in the treatment of epilepsy and chronic neuropathic pain which can, for instance, occur after shingles or late complications in diabetes. Pregabalin is also used in the treatment of anxiety disorders.

Although the potential for harmful use of gabapentinoids was considered to be minimal when authorised in 2004, there have been increasing numbers of international reports and medical publications about abuse due to the mood-lifting effects since 2012. Drug addicts

also self-medicate with gabapentinoids to deal with withdrawal symptoms. These medications are usually ingested, sometimes also crushed and sniffed.

It is particularly alarming that, according to published reports, pregabalin is mostly used by teenagers and young adults.

Tox Info Suisse has received just a few enquiries related to the abuse of gabapentinoids to date. Part of the reason for this may be because during an emergency consultation, the focus is on acute treatment rather than establishing the intent behind the overdose. Therefore, the number of poisoning cases related to gabapentinoid abuse may be significantly higher. The steady increase of enquiries related to gabapentinoids from 30 in 2006 to 144 in 2020 indicates that these medications are more often prescribed and, as a result, they are more available (see figure). There was also a rise in the number of enquiries about misuse.

References:

1. Perspectives on drugs: the misuse of benzodiazepines among high-risk opioid users in Europe. [www.emcdda.europa.eu](http://www.emcdda.europa.eu) (access 19.03.2021)
2. Saferparty.ch (access 19.03.2021)
3. Orsolini L, Corkery JM, Chiappini S, et al. 'New/Designer Benzodiazepines': An Analysis of the Literature and Psychonauts' Trip Reports. *Curr Neuropharmacol.* 2020;18:809–37.
4. Faraone SV et al. Systematic review: nonmedical use of prescription stimulants: risk factors, outcomes, and risk reduction strategies. *J Am Acad Child Adolesc Psychiatry* 2020;59(1):100–112.
5. Scholz I et al. Emergency department presentations related to abuse of prescription and over-the-counter drugs in Switzerland: time trends, sex and age distribution. *Swiss Med Wkly* 2019;149:w20056.

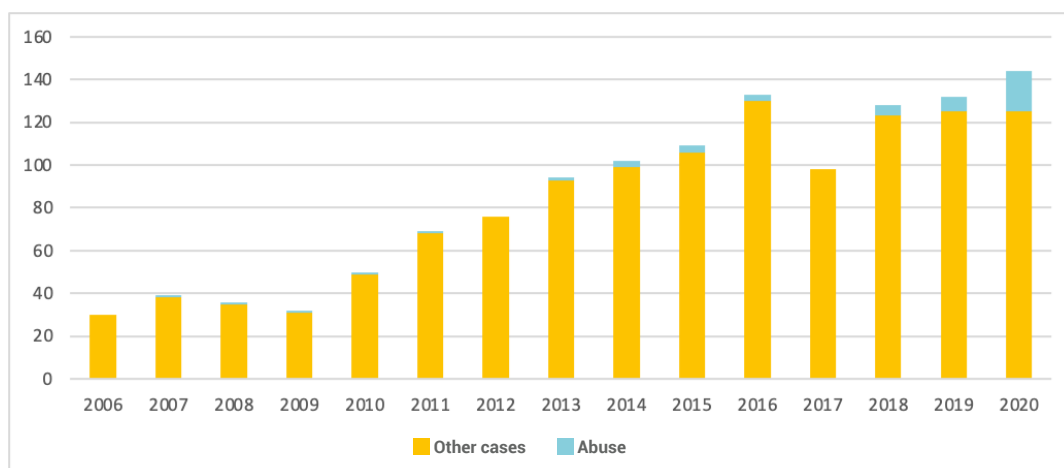


Fig.: Enquiries related to gabapentinoids – number of cases per year

## Emergency hotline 145

The demand for toxicological expertise has increased by a total of 12% over the past ten years, in other words, by well over 1% per year. The slight increase of 1.8% in the number of calls in 2020 is in line with the long-term trend.

The core service of Tox Info Suisse is its emergency telephone consultation for the general public and for medical professionals in all cases of acute or chronic poisoning. Tox Info Suisse also answers calls about theoretical exposure, therefore making a significant contribution to the prevention of accidental poisoning. All enquiries are electronically recorded in a database which is the basis for this annual report and for scientific analyses to continuously improve the quality of consultations. Medical confidentiality and data protection are respected.

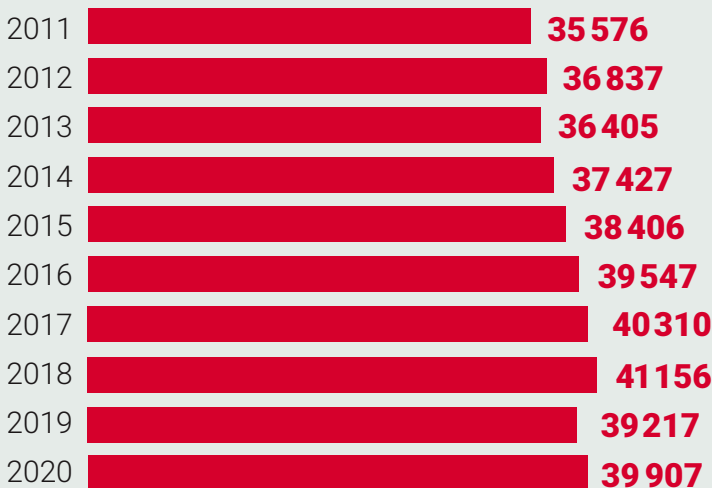
### Recognition as an emergency service

Owing to the vital importance of Tox Info Suisse, the Federal Office of Communications (OFCOM) recognised the short code 145 as an official emergency service from 1<sup>st</sup> January 2021. Tox Info Suisse is thus on the same footing as the emergency police (117) and ambulance (144) services.

### General overview of all enquiries

#### Number of enquiries

In 2020 Tox Info Suisse received 39 907 enquiries.



The number of enquiries increased 12% over the last ten years.

This represents a rise of 1.8% compared with the previous year.

### Origin of enquiries

The largest number of enquiries came from the general public, which reflects its need for information and the growing reputation of Tox Info Suisse. Physicians used our services 8 018 times. The majority of these enquiries came from hospital physicians (6 899). General practitioners submitted 1 119 enquiries to Tox Info Suisse. 1 029 enquiries were received from emergency services and 351 from pharmacists. Veterinarians accounted for 140 enquiries.

Tox Info Suisse also responded to 63 requests for information from the media (newspapers, radio and television). The remaining enquiries were received from organisations such as nursing homes (573), industry, poison centres abroad and unspecified organisations.

### Enquiries with or without toxic exposure

Calls can be categorised as enquiries without exposure and enquiries where an exposure has taken place. Among the 2 666 theoretical enquiries without exposure, information was provided on drugs and antidotes, the toxicity of plants to children and pets as well as the risk of poisoning from spoiled food, household products and chemicals, as well as venomous animals. These Tox Info Suisse recommendations are predominantly of a preventive nature. This subcategory also includes advice and reports for authorities, the media, private individuals, and various organisations as well as the distribution of fact sheets and referring enquiries to appropriate experts.

The 37 234 total enquiries with toxic exposures involved 35 946 humans and 1 288 animals. In seven cases, the reason for calling was unknown.



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Origin of enquiries by cantons and population groups

Canton	Population	General public	Hospital physicians	Practitioners	Pharmacists	Veterinarians	Various	Total	Calls/1000 inhabitants	
									public	physicians
AG	685 845	2 232	527	56	31	8	226	3 080	3.3	0.9
AI	16 128	38	3	–	–	–	1	42	2.4	0.2
AR	55 445	152	32	2	–	2	9	197	2.7	0.6
BE	1 039 474	3 793	955	124	41	15	497	5 425	3.6	1.1
BL	289 468	926	179	32	7	2	120	1 266	3.2	0.7
BS	195 844	746	367	51	19	–	104	1 287	3.8	2.1
FR	321 783	902	130	21	25	1	103	1 182	2.8	0.5
GE	504 128	1 333	297	67	36	6	208	1 947	2.6	0.7
GL	40 590	107	39	4	–	1	5	156	2.6	1.1
GR	199 021	536	169	37	7	7	37	793	2.7	1.1
JU	73 584	171	32	3	4	2	11	223	2.3	0.5
LU	413 120	1 153	335	70	10	8	163	1 739	2.8	1.0
NE	176 496	420	54	17	7	7	51	556	2.4	0.4
NW	43 087	76	20	3	–	–	8	107	1.8	0.5
OW	37 930	155	22	10	2	1	15	205	4.1	0.9
SG	510 734	1 409	377	63	6	4	160	2 019	2.8	0.9
SH	82 348	257	117	9	3	–	29	415	3.1	1.5
SO	275 247	953	182	28	10	4	90	1 267	3.5	0.8
SZ	160 480	464	78	21	4	3	22	592	2.9	0.6
TG	279 547	935	193	35	4	4	84	1 255	3.3	0.8
TI	351 491	617	274	40	18	5	27	981	1.8	0.9
UR	36 703	78	16	4	–	–	6	104	2.1	0.5
VD	805 098	2 374	316	84	50	13	201	3 038	2.9	0.5
VS	345 525	742	179	48	11	1	86	1 067	2.1	0.7
ZG	127 642	399	62	15	4	5	61	546	3.1	0.6
ZH	1 539 275	6 177	1 475	255	45	29	696	8 677	4.0	1.1
FL	38 747	144	20	6	1	–	8	179	3.7	0.7
Foreign		252	448	8	5	11	67	791	–	–
Unknown		680	1	6	1	1	82	771	–	–
<b>Total</b>	<b>8 644 780</b>	<b>28 221</b>	<b>6 899</b>	<b>1 119</b>	<b>351</b>	<b>140</b>	<b>3 177</b>	<b>39 907</b>	<b>3.3</b>	<b>0.9</b>
%		70.7	17.3	2.8	0.9	0.4	8.0	100	–	–

## Human poisoning

### Children younger than 5 years old most frequently involved

The highest number of cases involved children younger than five years old (44.7%). Overall, more children (55.0%) were affected by toxic exposures

than adults (44.8%). More boys were affected than girls (50.9% vs 48.0%) and more women than men (59.8% vs 39.6%). This distribution has hardly changed over the years.

## Age and gender of human cases with toxic exposure

		Age	Female	Male	Unknown	Total	
<b>Children</b>		8856	48.0%	9390	188	18434	55.0%
<b>Age</b>	<5 years	7170	81.0%	7724	100	14994	
	5 – <10 years	742	8.4%	927	11	1680	
	10 – <16 years	692	7.8%	506	4	1202	
	unknown	252	2.8%	233	73	558	
<b>Adults</b>		8979	59.8%	5954	86	15019	44.8%
<b>Age</b>	16 – <20 years	652	7.3%	368	1	1021	
	20 – <40 years	1500	16.7%	1189	3	2692	
	40 – <65 years	1168	13.0%	982	4	2154	
	65 – <80 years	372	4.1%	295	–	667	
	80+ years	264	2.9%	154	–	418	
	unknown	5023	55.9%	2966	78	8067	
<b>Unknown</b>		15	19.0%	8	56	79	0.2%
<b>Total</b>		<b>17850</b>	<b>53.2%</b>	<b>15352</b>	<b>330</b>	<b>33532</b>	<b>100%</b>

# 11

Most toxic exposures are accidental, in other words unintentional. They mainly involve small children.

## Accidental poisonings more common than intentional poisonings

A distinction must be made between the circumstances of poisoning, which can be divided into three categories: accidental (unintentional) poisoning, intentional poisoning and adverse drug reactions. Accidental poisoning occurs at home,

at work, or as a result of environmental exposure (caused by human activities via food, drinking water or breathing air). Intentional poisonings are suicides, attempted suicides, drug abuse and criminal poisoning (by a third party).

## Circumstances of toxic exposures in humans

Circumstances of toxic exposures		Acute poisoning (exposure ≤ 8 h)		Chronic poisoning (exposure > 8 h)	
Accidental domestic	24829	74.0 %	528	1.6 %	
Accidental occupational	906	2.7 %	43	0.1 %	
Accidental environmental	5	0.01 %	4	0.01 %	
Accidental others	1477	4.4 %	76	0.2 %	
<b>Total accidental</b>	<b>27217</b>	<b>81.2 %</b>	<b>651</b>	<b>1.9 %</b>	
Intentional suicide	3146	9.4 %	47	0.1 %	
Intentional abuse	683	2.0 %	85	0.3 %	
Intentional criminal	66	0.2 %	13	0.04 %	
Intentional others	669	2.0 %	131	0.4 %	
<b>Total intentional</b>	<b>4564</b>	<b>13.6 %</b>	<b>276</b>	<b>0.8 %</b>	
<b>Total accidental and intentional</b>	<b>31781</b>	<b>94.8 %</b>	<b>927</b>	<b>2.8 %</b>	
<b>Total acute and chronic</b>		<b>32708</b>	<b>97.5 %</b>		
<b>Adverse drug reactions</b>		<b>193</b>	<b>0.6 %</b>		
<b>Unclassifiable/others</b>		<b>631</b>	<b>1.9 %</b>		
<b>Total</b>		<b>33532</b>	<b>100 %</b>		

In both groups of toxic exposures it is necessary to distinguish between acute poisoning (exposure ≤ 8 hours) and chronic poisoning (exposure > 8 hours).

In addition, there are adverse drug reactions defined as toxic reactions in the context of a therapeutic drug administration.

# 12

## Agents

For the purposes of analysis, the relevant agents (toxins) were grouped into 12 categories. The distribution has not changed significantly

from the previous year. A supplement with details on the individual agent groups is available at [www.toxinfo.ch](http://www.toxinfo.ch).

## Frequency of agent groups in all cases of human poisoning

Agents/ Age groups	Adults	Children	Age unknown		Total
Pharmaceuticals	6 120	5 532	7	11 659	34.8%
Household products	3 031	5 764	16	8 811	26.3%
Plants	782	2 553	12	3 347	10.0%
Cosmetics and personal care products	366	1 867	–	2 233	6.7%
Technical and industrial products	1 482	408	7	1 897	5.7%
Food and beverages (excl. mushrooms and alcohol)	950	836	15	1 801	5.4%
Recreational drugs and alcohol	632	443	3	1 078	3.2%
Agricultural and horticultural products	341	311	5	657	2.0%
Mushrooms	358	217	5	580	1.7%
Venomous animals	299	118	1	418	1.2%
Veterinary drugs	78	42	–	120	0.4%
Other or unknown agents	580	343	8	931	2.8%
<b>Total</b>	<b>15 019</b>	<b>18 434</b>	<b>79</b>	<b>33 532</b>	<b>100%</b>

### Severity of poisoning

7 831 enquiries from physicians (97.7% of all medical enquiries) were related to cases of expected or pre-established poisoning. In these cases, the treating physicians received a summary of the telephone consultation, together with a request for feedback on the clinical outcome. Tox Info Suisse received a report on the outcome in 67.7% of these cases. Tox Info Suisse therefore receives expert medical information on the symptoms, clinical outcomes and treatment of acute and chronic poisonings. This information is entered in an in-house database, analysed, and used to continuously improve the quality of consultations related to poisoning.

Data capture and evaluation are standardised according to circumstances, causality and severity of poisoning. Severity is categorised as follows: no symptoms, minor, moderate, severe, or fatal. Minor

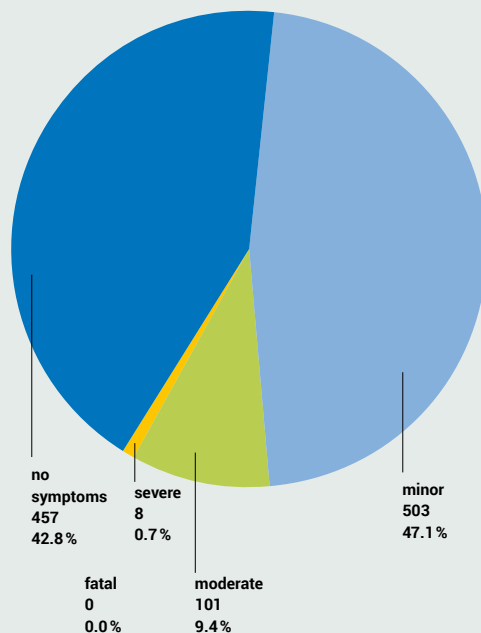
symptoms typically require no treatment, moderate symptoms usually require treatment, and cases with severe symptoms must be treated, without exception.

This annual report only includes poisonings where causality was confirmed or likely. Confirmed means that the toxin has been analytically detected in the body, the time course and symptoms are compatible with the toxin, and the symptoms could not be explained by an underlying illness or any other cause. Likely causality fulfils the same criteria, but the agent has not been detected in the body.

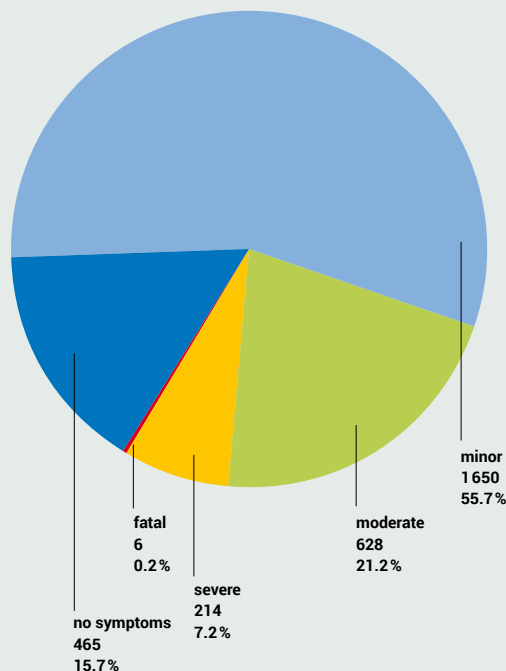
4 032 cases of people with and without symptoms but with sufficient evidence of causality were analysed further with regard to clinical course (– 4.5% compared to the previous year).

### Clinical outcome of poisoning in children and adults

Children (n = 1069)



Adults (n = 2963)



Of the 4032 cases where causality was confirmed or likely, about three fifths involved an ingestion of only one toxin. In two fifths of the cases, two or more agents were involved. These cases have been categorised according to the most important agent involved.

### Frequency of agent groups and severity of human poisoning in cases where medical feedback was received and analysed

Agent groups	Adults					Children					Total	
	N	Mi	Mo	S	F	N	Mi	Mo	S	F		
<b>Severity of poisoning</b>												
Pharmaceuticals	335	1030	364	140	4	285	239	54	6	-	2457	60.9%
Household products	38	137	26	7	-	93	122	18	-	-	441	10.9%
Recreational drugs and alcohol	14	125	127	40	-	9	33	14	1	-	363	9.0%
Technical and industrial products	30	208	40	12	-	8	21	5	-	-	324	8.0%
Plants	15	37	15	3	1	18	28	3	-	-	120	3.0%
Mushrooms	5	24	29	2	-	12	4	-	-	-	76	1.9%
Cosmetics and personal care products	9	18	-	-	-	17	22	1	-	-	67	1.7%
Venomous animals	4	16	10	3	-	1	9	3	1	-	47	1.2%
Food and beverages (excl. mushrooms and alcohol)	4	15	7	2	-	5	12	1	-	-	46	1.1%
Agricultural and horticultural products	4	13	3	2	-	5	4	-	-	-	31	0.8%
Veterinary drugs	3	7	1	2	1	-	1	-	-	-	15	0.4%
Other or unknown agents	4	20	6	1	-	4	8	2	-	-	45	1.1%
<b>Total</b>	<b>465</b>	<b>1650</b>	<b>628</b>	<b>214</b>	<b>6</b>	<b>457</b>	<b>503</b>	<b>101</b>	<b>8</b>	<b>-</b>	<b>4032</b>	<b>100%</b>

Severity of poisoning: N = no symptoms, Mi = minor, Mo = moderate, S = severe, F = fatal

## Animal poisoning

### Affected animals

1 288 enquiries relating to 1 272 cases also concerned a wide range of different animals in 2020: 924 dogs, 274 cats, 28 equines (donkeys, horses, ponies), 14 bovines (cattle, goats, sheep), 13 lagomorphs (hares, rabbits), 8 birds (chickens, parrots), 5 rodents (guinea pigs, mice, rats), 2 reptiles (tortoises), 2 pigs, 1 alpaca, 1 fish.

### Frequency of agent groups in all cases of animal poisoning

Agent groups		No. of cases
Food and beverages (excl. mushrooms and alcohol)	261	20.5%
Plants	247	19.4%
Pharmaceuticals	224	17.6%
Agricultural and horticultural products	188	14.8%
Household products	144	11.3%
Veterinary drugs	38	3.0%
Technical and industrial products	29	2.3%
Recreational drugs and alcohol	24	1.9%
Venomous animals	24	1.9%
Cosmetics and personal care products	22	1.7%
Mushrooms	18	1.4%
Other or unknown agents	53	4.2%
<b>Total</b>	<b>1 272</b>	<b>100%</b>



15

**Severity of poisoning**

Veterinarians were also asked to submit clinical follow-up reports on animal poisoning. Tox Info Suisse received a total of 54 reports which could be analysed.

**Frequency of agent groups and severity of animal poisoning in cases where medical feedback was received and analysed**

Agent groups	Severity of poisoning					Outcome	Total
	N	Mi	Mo	S	F		
Pharmaceuticals	11	2	–	1	–	14	25.9%
Plants	5	4	–	–	–	9	16.7%
Agricultural and horticultural products	6	2	–	–	–	8	14.8%
Food and beverages (excl. mushrooms and alcohol)	3	2	1	1	–	7	13.0%
Household products	4	2	–	–	–	6	11.1%
Veterinary drugs	2	–	2	–	–	4	7.4%
Recreational drugs and alcohol	1	–	1	–	–	2	3.7%
Venomous animals	–	1	–	1	–	2	3.7%
Cosmetics and personal care products	1	–	–	–	–	1	1.9%
Mushrooms	–	–	–	–	–	0	0.0%
Technical and industrial products	–	–	–	–	–	0	0.0%
Other or unknown agents	–	–	–	1	–	1	1.9%
<b>Total</b>	<b>33</b>	<b>13</b>	<b>4</b>	<b>4</b>	<b>–</b>	<b>54</b>	<b>100%</b>

Severity of poisoning: N = no symptoms, Mi = minor, Mo = moderate, S = severe, F = fatal

## Financial statements

### Income statement

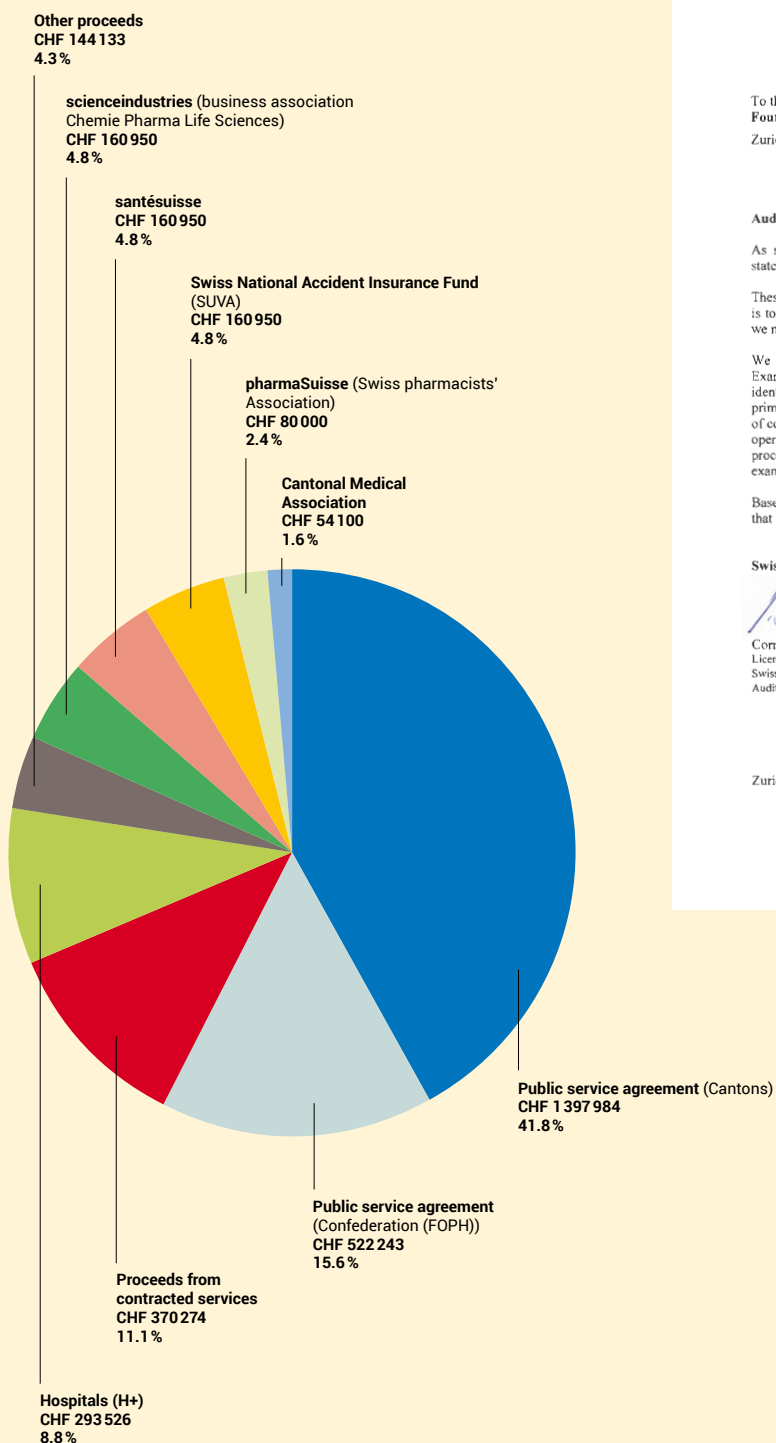
Income	2020	2019
	CHF	CHF
Contributions of founders and supporting bodies	616 950	618 950
Income from contracts		
Confederation (FOPH)	522 243	525 243
Cantons	1 397 984	1 387 781
Hospitals (H+)	293 526	312 013
Others	370 274	440 489
Honoraria and expert opinions	13 800	12 989
Research projects	6 510	17 785
Donations	80 504	88 301
Other income	43 319	16 516
<b>Total income</b>	<b>3 345 110</b>	<b>3 420 067</b>
<b>Expenses</b>		
Staff	2 746 546	2 817 572
Rent	149 806	139 291
Furniture and equipment	16 256	13 813
IT	218 441	270 998
G&A	25 287	29 241
Communication	9 154	9 167
Literature and archiving	2 792	3 167
Research and education	500	74
Telephone, postage	31 622	31 479
Other expenses and strategy projects	199 819	48 781
<b>Total expenses</b>	<b>3 400 223</b>	<b>3 363 582</b>
<b>Operating result</b>	<b>- 55 113</b>	<b>56 485</b>
Financial income	50	861
Financial expenses	- 413	- 325
<b>Total financial result</b>	<b>- 363</b>	<b>536</b>
Liquidation/allocation of provision to ensure liquidity	63 455	- 50 000
<b>Net profit</b>	<b>7 979</b>	<b>7 021</b>

### Balance sheet at 31<sup>st</sup> December

Assets	2020	2019
	CHF	CHF
Current assets		
Cash	3 385 786	3 452 414
Accounts receivable	350 577	429 983
Other current assets	-	257
Prepaid expenses and accrued income	4 174	56 455
<b>Total assets</b>	<b>3 740 537</b>	<b>3 939 109</b>
<b>Equity and Liabilities</b>		
Current liabilities		
Accounts payable	29 823	39 009
Other current liabilities	31 987	33 879
Accrued expenses and deferred income	183 512	291 397
	<b>245 322</b>	<b>364 285</b>
Non-current liabilities		
Provisions for IT	240 000	264 135
Provisions for research	260 000	260 000
Provisions to ensure liquidity	2 100 000	2 163 455
	<b>2 600 000</b>	<b>2 687 589</b>
Equity		
Foundation capital	100 000	100 000
Voluntary retained earnings	300 000	300 000
Capital reserves to ensure liquidity (contributions of founders and supporting bodies)	400 400	400 400
Retained earnings	94 815	86 836
- Profit carried forward	86 836	79 815
- Net profit	7 979	7 021
	<b>895 215</b>	<b>887 236</b>
<b>Total Equity and Liabilities</b>	<b>3 740 537</b>	<b>3 939 109</b>

) corresponds to 19.7 Full-Time Equivalents (FTE)

## Source of income



## Auditor's report



To the Council of  
**Foundation Tox Info Suisse**  
Zurich, Switzerland

**Auditor's report on the limited examination 2020**

As statutory auditors we have examined the financial statements (balance sheet, income statement and notes) of Foundation Tox Info Suisse for the year ended December 31, 2020.

These financial statements are the responsibility of the board of directors. Our responsibility is to perform a limited statutory examination on these financial statements. We confirm that we meet the licensing and independence requirements as stipulated by Swiss law.

We conducted our examination in accordance with the Swiss Standard on the Limited Examination. This standard requires that we plan and perform a limited examination to identify material misstatements in the financial statements. A limited examination consists primarily of inquiries of company personnel and analytical procedures as well as detailed tests of company documents as considered necessary in the circumstances. However, the testing of operational processes and the internal control system, as well as inquiries and further testing procedures to detect fraud or other legal violations, are not within the scope of this examination.

Based on our limited examination, nothing has come to our attention that causes us to believe that the financial statements do not comply with Swiss law and the rules of the foundation.

**Swiss Revision AG**




Cornel Baerlocher  
Licensed Audit Expert  
Swiss Certified Accountant  
Auditor in Charge

ppa. Michael Munt

Zurich, April 6, 2021 CB/MU

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info@swiss-revision.ch, www.swiss-revision.ch  Mitglied von CHEP Suisse

## Thanks to all our donors!

Tox Info Suisse is a charitable non-profit-making private foundation. It is partly funded by donations from companies, organisations and private individuals. The donations are used exclusively to support the poisons information service.

### Donations of and above CHF 1 000

Each contribution to the donation account supports the future of the poisons information service! We thank all donors in advance for their contribution to:

PostFinance:

IBAN CH20 0900 0000 8002 6074 7

Ernst Göhner Stiftung (project contribution)	25 000
GABA Schweiz AG	3 000
Henkel & Cie AG	3 000
Pfizer AG	3 000
Procter & Gamble Switzerland Sàrl	3 000
The Swiss Cosmetic and Detergent Association	3 000
Unilever Schweiz GmbH	3 000
Reckitt Benckiser Switzerland AG	2 000
Zambon Switzerland Ltd (+CHF 1 000 from previous year)	2 000
Ebi Pharm AG	1 000
Dr. med. Markus Christian Frey	1 000
Ideal Chimic SA	1 000
RSG Europe GmbH	1 000
Swiss Revision AG	1 000

Numerous smaller contributions not listed here are frequent and very welcome. We extend grateful thanks to all donors.

## Pursuing what has worked and overcoming challenges

As a whole, the number of consultations provided by Tox Info Suisse has remained largely the same over the past five years. However, the origin of the enquiries has changed: between 2016 and 2020 the number of enquiries from the general public increased from 67 % to 71 %. This reflects the great need for information and the growing reputation of Tox Info Suisse. During the same period, the number of enquiries from general practitioners decreased from 22 % to 20 % and those from veterinarians from 2 % to less than 1 %.

### High-quality information service

In order to constantly expand the knowledge of our staff, improve treatment options, and derive preventative measures, several elements are critical. Firstly, medical feedback is vital to gathering and evaluating high-quality medical information about symptoms, clinical course and treatment of poisoning incidents as well as to continually improve the quality of consultations. Secondly, trends can be identified by following poisoning incidents systematically. For instance, it was shown that when tablets containing 1 gram of paracetamol were introduced to the market, this led to an increase in poisonings with these preparations. It also resulted in the ingestion of higher doses on average and, as a result, to an increased risk of liver damage. This insight received international attention and was published in the prestigious Journal of the American Medical Association (JAMA)<sup>1</sup>. The correlation between the availability of toxic substances and the number of related poisonings can also be seen in the number of calls connected to disinfectant exposure, which have doubled during the current COVID-19 pandemic.

### Digitalisation in the information service

In the past, providing advice in the event of poisoning required 'simply' a telephone connection and a number of reference books. Nowadays, information and communication technologies (ICT) are very closely linked; matters such as automated data evaluation, risk calculation, and artificial intelligence can no longer be disregarded. The significantly increasing number of visitors to the Tox Info Suisse website ([www.toxinfo.ch](http://www.toxinfo.ch)) also

reflects the trend towards digitalisation.

Nevertheless, a personal consultation with a qualified specialist, who can take a person's individual circumstances into account, will continue to remain the gold standard. However, technical aids for medical professionals are steadily improving. Consequently, Tox Info Suisse has to replace its current ICT infrastructure in the coming years and some new technologies will be implemented. The framework for this endeavour consists of the actual benefit for daily consultations, the financial resources of Tox Info Suisse, and future directives on data protection.

### Long-term financial stability

The benefit of providing information in the event of poisoning is undisputed. Neither are there any reservations about the quality and financing costs of Tox Info Suisse. A study carried out by KPMG has shown that there is no available potential for cost optimisation at Tox Info Suisse.

On the other hand, funding the Foundation is becoming more and more challenging given present cost pressures. In view of the fact that some supporting bodies have announced their intention to reduce or even completely withdraw their contribution, the financing model and the supporting bodies must be regulated. It is particularly necessary to clarify who is responsible for the emergency and information service in cases of poisoning in Switzerland.

The Foundation Council is working with all parties involved as well as with political stakeholders towards a long-term financing solution. This is the only way for Tox Info Suisse to remain an attractive employer for qualified staff and thereby contribute to improved medical care for the Swiss population.

<sup>1</sup> National poison center calls before vs after availability of high-dose acetaminophen (paracetamol) tablets in Switzerland. Martinez-De la Torre A, Weiler S, Bräm DS, Allemann SS, Kupferschmidt H, Burden AM. JAMA Netw Open 2020; 3: e2022897

## The work of Tox Info Suisse enjoys broad support

Tox Info Suisse is a private foundation. It was established in 1966 and is based on a private-public partnership.

### Supporting bodies



**pharmaSuisse** is the Swiss pharmacists' Association. It is the founder of the Swiss Toxicological Information Centre in 1966, now Tox Info Suisse.



**santésuisse** is the inter-trade organisation of Swiss health insurance companies in the domain of social health insurance.



**scienceindustries** is the Swiss business association Chemie Pharma Life Sciences. It is the co-founder of the Swiss Toxicological Information Centre in 1966, now Tox Info Suisse.



**Suva** is the biggest institution in the field of compulsory accident insurance in Switzerland.



The **KKA** is the Conference of the Cantonal Medical Associations

### Partners



Tox Info Suisse is an associated institute of the University of Zurich in the domains of research and education.

### Service Level Agreements



**GDK** Schweizerische Konferenz der kantonalen Gesundheitsdirektorinnen und -direktoren  
**CDS** Conférence suisse des directrices et directeurs cantonaux de la santé  
**CDS** Conferenza Svizzera delle direttrici e dei direttori cantionali della sanità

The services for the general population in Switzerland are regulated by a service level agreement with the Swiss Conference of Cantonal Directors of Public Health (GDK).



Tox Info Suisse is involved with the European Association of Poisons Centres and Clinical Toxicologists ([www.eapcc.org](http://www.eapcc.org)).



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra

Eidgenössisches Departement des Innern EDI  
Bundesamt für Gesundheit BAG

By order of the Swiss Federation, and on the basis of the law and ordinance on chemicals, Tox Info Suisse contributes significantly to emergency consultation and poisoning prevention.



Tox Info Suisse collaborates closely with the Society of Clinical Toxicology (Gesellschaft für Klinische Toxikologie, GfKT) which is the professional society of the German-speaking poisons information centres and of clinical toxicologists.



Die Spitäler der Schweiz  
Les Hôpitaux de Suisse  
Gli Ospedali Svizzeri

**H+** is the national central association of public and private hospitals, infirmaries, and nursing homes.



**scaht**  
Swiss Centre for Applied Human Toxicology  
Schweizerisches Zentrum für Angewandte Humantoxikologie  
Centre Suisse de Toxicologie Humaine Appliquée  
Centro Svizzero di Tossicologia Umana Applicata

Tox Info Suisse is represented in the foundation council of the SCAHT.



By order of the Swiss Agency for Therapeutic Products (Swissmedic) Tox Info Suisse provides veterinary pharmacovigilance.



## Individuals committed to Tox Info Suisse

### Foundation Council

**Chairperson:** Elisabeth Anderegg-Wirth, pharmaSuisse (until 31.3.2021) / Hans Rudolf Keller, PhD, pharmaSuisse (as of 1.4.2021)  
**Vice-Chairman:** Marcel Sennhauser, scienceindustries  
**Members:** Michael Arand, PhD, University of Zurich / Orlando Bitzer, H+ (as of 1.1.2021) / Philipp Brugger, GDK / Roland Charrière, PhD, Federal Office of Public Health / Verena Nold, santésuisse / Claudia Pletscher, M.D., Suva (until 31.7.2020) / Ulrich Schaefer, PhD, pharmaSuisse (as of 1.3.2021) / Jana Siroka, M.D., FMH (as of 1.3.2021) / Cantonal Government Councilor Petra Steimen, GDK / Markus Tschanz, H+ (until 30.9.2020) / Fabian Vaucher, pharmaSuisse (until 28.2.2021) / Josef Widler, M.D., Conference of the Cantonal Medical Associations (until 28.2.2021) / Anja Zyska Cherix, M.D., Suva (as of 10.9.2020)  
**Honorary member:** Franz Merki, PhD

### Management

**Management:** Hugo Kupferschmidt, M.D., EMBA-HSG, Director (until 31.1.2021) / Hans Rudolf Keller, PhD, interim Managing Director (19.10.2020-31.3.2021) / Damaris Ammann, Managing Director (as of 1.4.2021)  
**Head physician and deputy director:** Cornelia Reichert, M.D.  
**Senior physicians:** Katharina Hofer, M.D. / Colette Degrandi, M.D. / Katrin Faber, M.D. / Katharina Schenk, M.D.  
**Head of scientific services:** Stefan Weiler, M.D., PhD, MHBA  
**Head of administration:** Maja Surbeck

### Staff

Natascha Anders, nurse / Alexandra Bloch-Teitelbaum, RPh / Danièle Chanson, executive assistant/certified translator / Trudy Christian, triage / Ioanna Farmakis, cleaning service / Joan Fuchs, M.D. / Mirjam Gessler, M.D. / Karen Gutscher, M.D. / Rose-Marie Hauser-Panagl, executive assistant / Teresa Hiltmann, M.D. / Evelyne Jina Prüss, M.D. / Noëmi Jöhl, physician / Irene Jost-Lippuner, M.D. / Seraina Kägi, M.D. / Helen Klingler, M.D. / Sandra Koller-Palenzona, M.D. / Birgit Krueger, physician / Jacqueline Kupper, DVM / Loredana Lang, triage / Nadine Martin, M.D. / Franziska Möhr-Spahr, triage / Corinne Nufer, nurse/expert in emergency care / Stefanie Schulte-Vels, physician / Verena Sorg, M.D. (until 30.4.2020) / Joanna Stanczyk Feldges, M.D. / Jolanda Tresp, triage / Sonja Tscherry, nurse / Claudia Umbricht, IT / Margot von Dechend, M.D. / Karin Zuber, triage.  
**Medical students:** Beat Greiter (1.1.-31.10.2020), Florian Hauser (as of 1.5.2020), Michael Killian (until 31.10.2020), Marie Lefebvre (as of 1.10.2020), Max Maane (as of 1.10.2020), Micheline Maire, PhD, (until 30.9.2020).

### Advisors

Numerous experts from hospitals, institutes, state and federal organisations act as honorary advisors, most notably Jean-Pierre Lorent (former Director) and Professor Martin Wilks M.D., PhD (SCAHT).

## Scientific publications

The list of the scientific publications, doctoral theses and master theses can also be found on the website [www.toxinfo.ch](http://www.toxinfo.ch).

Some of the listed papers can be downloaded from our website [www.toxinfo.ch](http://www.toxinfo.ch). All others are accessible through scientific libraries. Leaflets about first aid and poisoning prevention are also available in German, French and Italian.

### **Flurbiprofen toxicosis in dogs** [abstract].

Bates N, Faber K.  
Clin Toxicol 2020; 58: 534.

### **Antidote bei Vergiftungen 2020/2021.**

Bisig R, Degrandi C, Gyr E, Kullin A, Kupferschmidt H, Meister Th.  
BAG Bull 2020; 33: 12–29.

### **Systemische Mykosen.**

Cornely OA, Weiler S.  
In: Herold G, Herold Verlag, Köln.  
Innere Medizin 2020; 388–91.

### **Ingestion of caustic substances.**

Degrandi C, Kupferschmidt H, Weiler S.  
N Engl J Med 2020; 383: 599–600.

### **Bite by a juvenile *Bothrops venezuelensis* (*Venezuelan lancehead*) resulting in severe envenomation: A case report.**

Fuchs J, Faber K, Tuchscherer DT, Tsakiris DA, Weiler S, Hofer KE.  
Toxicol 2020; 180: 39–42.

### **Epidemiology of bites by indigenous venomous snakes in Switzerland reported to Tox Info Suisse over a 22 year period** [abstract].

Fuchs J, Gessner T, Kupferschmidt H, Weiler S.  
Clin Toxicol 2020; 58: 637–38.

### **Intensive hemodiafiltration successfully removes Ganciclovir overdose and largely exceeds reported elimination during hemodialysis. A case report and review of the literature.**

Gotta V, Leuppi-Taegtmeyer A, Gessler M, Pfister M, Müller D, Jehle AW.  
Front Pharmacol 2020; 11: 882: 1–8.

### **Extracorporeal life support as bridge to recovery in yew poisoning: case reports and literature review.**

Hermes-Laufer J, Meyer M, Rudiger A, Henze J, Enselmann K, Kupferschmidt H, Müller D, Herzog A, Bettex D, Keller DI, Krüger B, Engeler J.  
ESC Heart Fail 2020 [early online].  
(ESC Heart Fail 2021; 8: 705–709).

### **Akute Methamphetamin-Intoxikation: ein Stimulanzien-Toxidrom.**

Hofer KE, Weiler S.  
Prim Hosp Care 2020; 20: 65–66.

### **Acute toxicity profile of levomepromazine in overdose: a consecutive case series** [abstract].

Hofer KE, Kupferschmidt H, Weiler S.  
Clin Toxicol 2020; 58: 613–14.

### **Folge 8: Verschluckte Knopfbatterie.**

Hofer KE, Reichert C, Weiler S.  
Prim Hosp Care 2020; 20: 178–79.

### **Folge 9: Wie gefährlich sind Schneckenkörner für Kleinkinder?**

Hofer KE, Weiler S.  
Prim Hosp Care 2020; 20: 272–73.

### **National poison center calls before vs after availability of high-dose acetaminophen (paracetamol) tablets in Switzerland.**

Martinez-De la Torre A, Weiler S, Bräm DS, Allemann SS, Kupferschmidt H, Burden AM.  
JAMA Netw Open 2020; 3: e2022897.

### **A comprehensive analysis of attempted and fatal suicide cases involving frequently used psychotropic medications.**

Pfeifer P, Greusing S, Kupferschmidt H, Bartsch C, Reisch T.  
Gen Hosp Psychiatry 2020; 63: 16–20.

### **Favorable toxicity profile of escitalopram in acute overdose in adults** [abstract].

Schenk-Jaeger KM, Faber K, Kupferschmidt H, Weiler S.  
Clin Toxicol 2020; 58: 620.

### **Pilzvergiftungen 2019.**

Schenk-Jäger K.  
SZP – Schweiz Zeitschr Pilzkd 2020; 98: 36–39.

### **Movement disorders and use of risperidone and methylphenidate: a review of case reports and an analysis of the WHO database in pharmacovigilance.**

Stämpfli D, Weiler S, Burden AM.  
Eur Child Adolesc Psychiatry 2020 [early online].

### **Thromboembolic safety reporting of Tofacitinib and Baricitinib: An Analysis of the WHO VigiBase.**

Vallejo-Yagüe E, Weiler S, Micheroli R, Burden AM.  
Drug Saf 2020; 43: 881–91.

### **Vergiftungen in der Schweiz.**

Weiler S, Kupferschmidt H.  
Schweiz Aertzetzg 2020; 101: 88–92.

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