



Swiss Toxicological  
Information Centre

## ■ Annual Report 2004

[www.toxi.ch](http://www.toxi.ch)

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## ■ Editorial

Dear Readers

2004 could be called our «year of new beginnings».

Following the departure of J.P. Lorent, our highly valued Administrative Director of many years, and the Medical Director Prof. Dr. Peter J. Meier-Abt, equally held in high esteem, a new crew of established and trusted colleagues has taken over the running of the Swiss Toxicological Information Centre (STIC): Dr. Hugo Kupferschmidt M.D., previously Chief Resident, has been appointed Director and Physician in Charge and Dr. Christine Rauber-Lüthy M.D. as Deputy Director and Head of the Information Service. On behalf of the Foundation Council I wish them both all the best, success and fulfilment in their demanding work.

In 2004 we embarked on a reorganisation of the STIC which – thanks to the preliminary work completed in that year – became effective on 1 January 2005. This reorganisation has – as far as can be judged to date – already been a success in all aspects thanks to the good collaboration and motivation the team has shown. Reorganisation and restructuring «prescribed» from above depend on the contribution of the team members on the ground to turn vision into reality. Our thanks are due to all members of staff. A few posts could not yet be filled for understandable reasons.

In today's age information is instantly accessible and thus processing and integrating new information into what is already known is becoming more important than merely passing information on. Therefore, a proper scientific basis of our work is becoming increasingly important and in the reporting year we have started relevant negotiations with the University of Zurich which will – I hope – be finalised in a contract during the year 2005.

Our endeavours to open up new sources of income in addition to the financial support we currently receive and to offer our qualified services to a wider circle of interested parties have benefited from current good contacts and working relationship with Swissmedic and the Swiss Federal Office of Public Health. The STIC has entered into service level agreements with them which have overall been beneficial.

In the context of our new beginnings we have also updated the statutes of the Foundation Council. The Swiss Foundation Authority requested some minor amendments and the update has now been approved and put into effect.

We are aware that the continuing loyalty of the Foundation's established supporting organisations must not be taken for granted in times of budgetary constraints all around us and, all the more reason to thank them for their support without which the STIC could not fulfill its task of advising the whole population free of charge in cases of poisoning incidents. Our thanks are also due to our members of staff for accomplishing their work with enthusiasm and great dedication in an increasingly difficult environment.

DR. FRANZ MERKI  
PRESIDENT OF THE FOUNDATION COUNCIL



## Introduction

This annual report provides information on the utilisation of the information service, type and severity of poisoning incidents, educational activities, research projects, collaborations, the Swiss Antidote Network and publications. The section entitled human poisoning has been summarised in tabular format. More detailed information can be found in an appendix to this annual report which is available separately.

The national emergency telephone number 145 introduced in November 2003 is now well established and recognised throughout the country. Apart from some minor, transient fluctuations the number of calls received has remained constant at a level of over 30 000 calls annually. Compared to the previous year the number of enquiries received has reduced slightly from 32 217 to 31 404. Every year we see a peak in calls during the summer months which is mostly due to small children being exposed to plants. Usage of the web site continues to be on the increase: in 2004 the STIC's website was visited more than 120 000 times compared to approximately 100 000 times the previous year. This shows that parts of the telephone advisory service can be supplemented or replaced by information available on the Internet. Experience shows, however, that the personal communication of the caller with the STIC's advisors is vital for an adequate and case-specific consultation.

The reorganisation project commenced in 2004 has been mostly completed by the beginning of 2005. The STIC now has a slimmed down management benefiting from short decision making processes. We have furthermore succeeded in reducing the high level of staff fluctuations by awarding longer term contracts which significantly increase competence and experience of the individual staff members. Furthermore the emergency response team has been strengthened by the appointment of pharmacists and nursing staff which frees up some of the physicians' time to be utilised elsewhere. In the course of this reorganisation a new shift rota had to be introduced in view of new employment regulations for physicians. Significantly reduced night duty has led to a visible improvement in working conditions. More time is needed to

appoint experienced clinical toxicologists and, following the departure of Prof. Peter J. Meier-Abt, we have yet to make an appointment in the area of scientific services which we hope to achieve during 2005 together with the University of Zurich.

In view of the New Swiss Chemicals Law which replaced the former Poisons Law on 1 August 2005, the STIC has entered into a service level agreement with the Federal Office of Public Health to cover the tasks the STIC has taken on. Initial experiences made in the reporting year are positive. We have also entered into an agreement with the Swiss Agency for Therapeutic Products (Swissmedic) for services in the area of toxicovigilance.

In the reporting year we have invested considerable personnel and technical resources in the prevention of poisonings in children, which account for more than half the poisoning incidents for which the STIC is being asked for advice. As a result the online game «Toxli» was developed in cooperation with the company pnn AG to make pre-school children aware of poisoning dangers present in the home. The project was made possible through the financial support of the Federal Office of Public Health and the Ernst Göhner and OPO Foundations. It was coordinated with the prevention campaign «Gift – (k)ein Kinderspiel» (poison – (not) a child's play) of the Swiss Society of Pharmacists (SAV). The new edition of the pamphlet on indigenous venomous snakes updated in collaboration with the Swiss Tropical Institute and the Swiss Co-ordinating Centre for the Protection of Amphibians and Reptiles (KARCH) also belongs in the area of preventive work.

Reporting on adverse drug reactions to the Swiss Agency for Therapeutic Products (Swissmedic) continues to be handled efficiently, quickly and to high scientific standards in collaboration with the Department of Clinical Pharmacology and Toxicology at the University Hospital Zurich.

## ■ Focus

It is not only the number of callers looking for help from the Swiss Toxicological Information Centre that has remained surprisingly constant over the last few years, but also the distribution of calls in relation to the various agent groups fluctuates only slightly from year to year (see page 11). Nevertheless we have observed some deviations from the usual distribution in the reporting year.

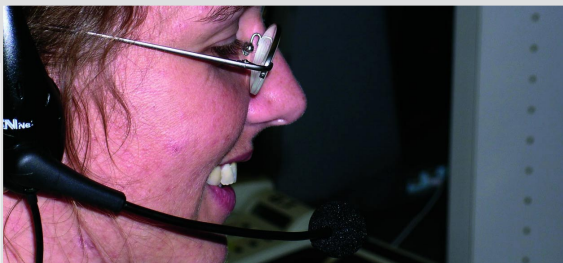
One of these is the significant increase in enquiries relating to **mushrooms**. 327 enquiries were received relating to this agent group in 2003 as opposed to 433 in the year 2004, an increase of 32%. It is as yet not clear whether this increase is due to mushroom pickers' uncertainty in the light of service changes of the mushroom identification offices (and thus an increasing number of unvetted mushrooms having been ingested) or due to the good weather conditions and thus increased mushroom picking.

The STIC observed a new phenomenon last year, namely an increase in poisonings with **acetic acid** in families from Kosovo. Apparently it is common in Kosovo to buy concentrated acetic acid (approximately 80%) and to dilute it prior to use in salad dressings or for pickling vegetables. The concentration of acetic acid in vinegar commonly available in Switzerland is 6 to 8%. In one case a young woman deliberately ingested the product and died of corrosive lesions of her internal organs after 3 days. There have however also been incidents of accidental ingestion or skin exposure, especially in children. One swallow is sufficient to cause oesophageal burns.

In 2004 emphasis was put on two aspects of **prevention**. «**Toxli**», an online game for poisoning prevention in pre-school children was developed. In a virtual household a child encounters daily objects, both dangerous and harmless such as cigarettes, nail varnish remover, yo-yo and soup ladle and decides via mouse click whether it is allowed to play with this item or whether it should leave well alone. The child is immediately shown whether its choice was right. Once the tour through the house is completed, the child receives a general

evaluation of its knowledge. With every four new items are being found and thus the game can be played repeatedly. The game also offers information on important toxins in house and garden for parents and other caregivers. The adults receive up-to-date information on the dangers and necessary counter measures. The game can be played in Swiss German, French and Italian and is accessed by clicking on the Toxli logo on the STIC website ([www.toxi.ch](http://www.toxi.ch)). This project was made possible through the financial support of the Swiss Federal Office of Public Health, and the Ernst Göhner and the OPO Foundations.

Being bitten by indigenous venomous snakes in Switzerland is a rare occurrence. A precise number cannot be given, as the snake can often not be identified and a judgement has to be made based on bite marks and symptoms. This does not enable an accurate analysis of the type of snake involved in all cases. Approximately 35 cases were reported to the STIC in 2004. A snake bite is very frightening and the person concerned and any accompanying persons are scared and unsure what to do. A new **pamphlet on snake bites by indigenous venomous snakes** aims to show what can be done to avoid being bitten and explains measures to be taken if somebody gets bitten. The pamphlet was developed in cooperation with the Swiss Coordinating Centre for the Protection of Amphibians and Reptiles (KARCH) and the Swiss Tropical Institute and financially supported by a variety of organisations (Federal Office of Public Health, pro natura, Pentapharm, SAC, DGHT Zurich). It can be obtained from the STIC free of charge.



## Emergency and information service

The main services provided by the STIC are telephone consultations for members of the general public and physicians in cases of acute and chronic poisoning. In addition, the centre answers theoretical questions and contributes to the prevention of accidental poisoning.

All calls to the information service of the STIC are recorded electronically in its own data base, and are analysed in the Annual Report.

### Overview of all calls

#### Use of the service

In 2004, the information service of the STIC received 31 404 enquiries which represents a slight decrease of 2.5% compared to the previous year.

Figure 1

#### Number of enquiries to the centre over the last ten years

1995	29 788
1996	29 469
1997	29 506
1998	29 510
1999	29 669
2000	30 935
2001	32 330
2002	33 111
2003	32 217
2004	31 404

#### Origin of calls

Table 1 shows the number of calls received in 2004 from the individual cantons of Switzerland and the different population groups.

The largest number of calls came from the general public (62.6%). These calls reflect the need for information by the general public, and also how well the STIC is known. The largest proportion of calls from the public originated from the canton of Zurich (4.4 per 1000 inhabitants). The smallest number of calls was received from the cantons of Ticino, Jura and Nidwalden.

Physicians used our service 8930 times. Compared to the year 2003 this represented a decrease of 303 and 81 calls by hospital physicians and general practitioners respectively. Based on population, the largest proportion of physician calls came from the cantons of Basel-Stadt and Geneva, followed by the cantons of Appenzell Auserrhoden, Glarus, Jura and Zurich. Veterinarians accounted for 498 calls to the STIC, pharmacists for 521.

The STIC also supplies information to the media (newspapers, radio and television), the emergency services, care homes, industry and poisons centres abroad. In 2004 we received a total of 1797 requests for information from these different and diverse organisations.

Table 1

**The number of calls received in 2004 by cantons and population groups**

Canton	Population	General public	Hospital doctors	Practitioners	Veterinarians	Pharmacists	Various	Total	Calls per 1000 inhabitants	
									Public	Physicians
AG	560 674	1 367	472	107	29	31	115	2 121	2.4	1.0
AI	15 010	30	8	4	1	–	2	45	2.0	0.8
AR	52 976	125	60	14	2	–	12	213	2.4	1.4
BE	951 957	2 741	738	220	85	85	241	4 110	2.9	1.0
BL	264 402	654	199	58	9	10	42	972	2.5	1.0
BS	186 653	478	313	49	4	19	78	941	2.6	1.9
FR	246 656	481	192	30	14	14	29	760	2.0	0.9
GE	423 993	833	534	89	17	43	87	1 603	2.0	1.5
GL	38 502	68	37	17	3	2	7	134	1.8	1.4
GR	186 943	424	153	72	21	23	29	722	2.3	1.2
JU	69 064	73	85	14	6	10	5	193	1.1	1.4
LU	353 175	753	271	104	16	6	70	1 220	2.1	1.1
NE	167 047	326	154	22	10	26	23	561	2.0	1.1
NW	39 070	49	15	11	–	–	5	80	1.3	0.7
OW	33 142	62	21	11	3	–	–	97	1.9	1.0
SG	457 289	1 014	356	126	26	14	84	1 620	2.2	1.1
SH	73 968	178	76	25	6	4	20	309	2.4	1.4
SO	246 807	511	131	40	8	4	38	732	2.1	0.7
SZ	134 903	252	74	24	7	4	11	372	1.9	0.7
TG	231 836	477	174	61	21	6	42	781	2.1	1.0
TI	317 315	314	319	53	10	11	38	745	1.0	1.2
UR	35 118	61	15	2	4	1	1	84	1.7	0.5
VD	639 105	1 460	578	114	48	70	104	2 374	2.3	1.1
VS	285 008	463	234	56	25	22	29	829	1.6	1.0
ZG	103 642	270	76	19	11	7	32	415	2.6	0.9
ZH	1 249 893	5 549	1 395	411	97	104	549	8 105	4.4	1.4
FL	34 294	56	9	10	1	1	1	78	1.6	0.6
Foreign	–	196	431	26	13	3	64	733	–	–
Unknown	–	393	10	11	1	1	39	455	–	–
<b>Total</b>	<b>7 398 442</b>	<b>19 658</b>	<b>7 130</b>	<b>1 800</b>	<b>498</b>	<b>521</b>	<b>1 797</b>	<b>31 404</b>	<b>2.7</b>	<b>1.2</b>
%	–	62.6	22.7	5.7	1.6	1.7	5.7	100	–	–

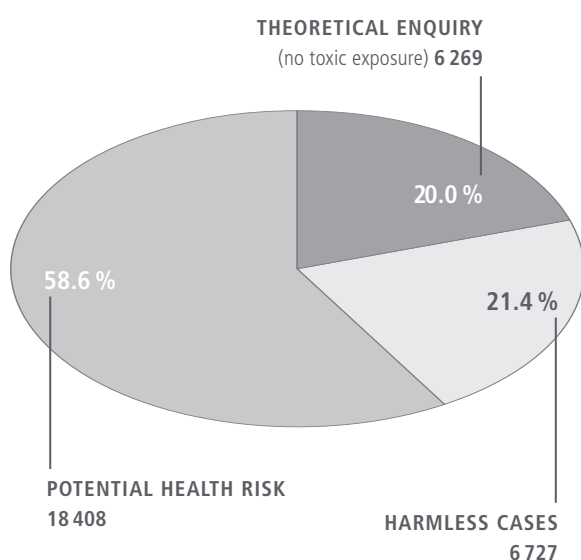


## Types of calls

Calls can be sub-divided into enquiries without exposure and enquiries where exposure has taken place. In cases of exposure there is a difference between harmless situations where no or no relevant symptoms are to be expected, and cases of potential or definite health risk.

Figure 2

Types of calls (n = 31 404)



Among the 6269 calls without toxic exposure, frequent questions concerned drugs and antidotes, toxicity of plants to children and pets, and dangers of poisoning from spoilt food, household products and chemicals, with the recommendations given by the STIC being predominantly of a preventive nature. This sub-category also includes advice and preparing reports for authorities, media, private individuals and various organisations as well as distribution of fact sheets and referring enquiries to appropriate experts.

The 25 135 calls received following potentially toxic exposure concerned 24 061 humans and 1074 animals. The following section discusses human poisoning, whereas animal poisoning is dealt with in a separate section (pages 14–15).

## Human poisoning

Table 2 shows an overview of the calls received with potentially toxic exposure (24 061). Children were involved in 51.3% of the cases, adults in 48.4%. In 66 cases (0.3%), the age group remained unknown.

The highest number of calls involved children under five years of age (39.4%). The proportion of harmless cases was significantly higher in children (20.5%) than in adults (6.5%). In contrast, the proportion of cases with potential health risk was somewhat higher in adults (41.9%) than in children (30.9%). Boys were more frequently represented amongst the children (22.6% vs. 21.0%) and women amongst the adults (26.6% vs. 17.6%).



Table 2  
Age and gender of human cases with potentially toxic exposure

		Harmless cases		Potential health risk		Total	
<b>Children</b>		<b>4 930</b>	<b>20.5 %</b>	<b>7 426</b>	<b>30.9 %</b>	<b>12 356</b>	<b>51.3 %</b>
Age	< 5 years	4 077	17.0 %	5 416	22.5 %	9 493	39.4 %
	5 – < 10 years	311	1.3 %	589	2.5 %	900	3.7 %
	10 – < 16 years	155	0.6 %	628	2.6 %	783	3.3 %
	unknown	387	1.6 %	793	3.3 %	1 180	4.9 %
Sex	girls	2 020	8.4 %	3 043	12.7 %	5 063	21.0 %
	boys	2 097	8.7 %	3 351	13.9 %	5 448	22.6 %
	unknown	813	3.4 %	1 032	4.3 %	1 845	7.7 %
<b>Adults</b>		<b>1 561</b>	<b>6.5 %</b>	<b>10 078</b>	<b>41.9 %</b>	<b>11 639</b>	<b>48.4 %</b>
Sex	female	821	3.4 %	5 580	23.2 %	6 401	26.6 %
	male	506	2.1 %	3 716	15.4 %	4 222	17.6 %
	unknown	234	1.0 %	782	3.3 %	1 016	4.2 %
<b>Unknown</b>		<b>14</b>	<b>0.1 %</b>	<b>52</b>	<b>0.2 %</b>	<b>66</b>	<b>0.3 %</b>
<b>Total</b>		<b>6 505</b>	<b>27.0 %</b>	<b>17 556</b>	<b>73.0 %</b>	<b>24 061</b>	<b>100 %</b>

### Circumstances of poisoning

Table 3 shows the circumstances of poisoning in the 24 061 cases with potentially toxic exposure. **Acute accidental intoxications** (17 681) represented the largest group. These occurred frequently at home with children ingesting easily accessible drugs, household products or plant parts. Adults too were involved in toxic exposures at home, but a significant number of enquiries involved work place accidents (813).

**Acute intentional poisoning** was mostly due to attempted suicide (3819 cases), less frequently due to drug abuse (461 cases) or related to criminal behaviour (72 cases).

**Chronic poisoning** was relatively rare (679 cases) compared to acute intoxications. **Adverse drug** reactions in therapeutic doses led to 214 information requests. These were mainly related to the establishment of a causal link between the observed symptoms and the medication taken.



Table 3  
Circumstances of toxic exposures

Circumstances of toxic exposures		Acute poisoning (Exposure <8h)		Chronic poisoning (Exposure >8h)
Accidental domestic	15 646	65.0 %	184	0.7 %
Accidental occupational	813	3.4 %	90	0.4 %
Accidental environmental	5	0.1 %	10	0.1 %
Accidental others	1 217	5.0 %	123	0.5 %
<b>Total accidental</b>	<b>17 681</b>	<b>73.5 %</b>	<b>407</b>	<b>1.7 %</b>
Intentional suicide	3 819	15.9 %	49	0.2 %
Intentional abuse	461	1.9 %	58	0.2 %
Intentional criminal	72	0.3 %	9	0.1 %
Intentional others	982	4.1 %	156	0.6 %
<b>Total intentional</b>	<b>5 334</b>	<b>22.2 %</b>	<b>272</b>	<b>1.1 %</b>
<b>Total accidental and intentional</b>	<b>23 015</b>	<b>95.7 %</b>	<b>679</b>	<b>2.8 %</b>
<b>Total acute and chronic</b>		<b>23 694</b>	<b>98.5 %</b>	
<b>Adverse drug reactions</b>		<b>214</b>	<b>0.9 %</b>	
<b>Unclassifiable</b>		<b>153</b>	<b>0.6 %</b>	
<b>Total</b>		<b>24 061</b>	<b>100 %</b>	

### Agents involved

For analysis, the agents and toxins were split up into twelve groups. Table 4 shows these different groups and how often they were involved in the total of 24 061 poisonings in humans.

Most toxic exposures occurred with pharmaceuticals (36.4%), followed by household products (24.3%) and plants (11.6%). Details of the individual agent groups are available in the supplement to this Annual Report which can be ordered separately.

### Severity of poisonings

5999 enquiries from physicians (67% of all medical calls) were concerned with cases of expected or already established poisoning. In these cases, the treating physicians received a written follow-up of the telephone consultation, together with a request for feedback on the clinical outcome. The STIC received a report on the outcome in 73% of these cases. Thus the STIC received additional information, evaluated by physicians, concerning symptoms, clinical outcome and treatment of acute and chronic poisonings which was entered and analysed in our in-house information system.

Table 4  
**Agents involved in all cases of poisonings in humans**

Agents/Age groups	Adults	Children	Age unknown		Total
Pharmaceuticals	5 130	3 603	12	8 745	36.4 %
Household products	2 010	3 817	16	5 843	24.3 %
Plants	593	2 189	4	2 786	11.6 %
Technical and industrial products	1 301	343	8	1 652	6.9 %
Cosmetics and personal care products	183	875	–	1 058	4.4 %
Recreational drugs, alcohol	451	378	3	832	3.4 %
Food and beverages	549	240	3	792	3.3 %
Agricultural and horticultural products	335	366	1	702	2.9 %
Venomous animals	312	125	5	442	1.8 %
Mushrooms	265	165	3	433	1.8 %
Veterinary drugs	46	46	–	92	0.4 %
Others or unknown agents	464	209	11	684	2.8 %
<b>Total</b>	<b>11 639</b>	<b>12 356</b>	<b>66</b>	<b>24 061</b>	<b>100 %</b>

Data capture and data evaluation was standardised according to circumstances, causality and severity of poisoning. This annual report only includes poisonings where the causality was confirmed or likely. Confirmed means the toxin has been found 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, except that the agent has not been detected in the body.

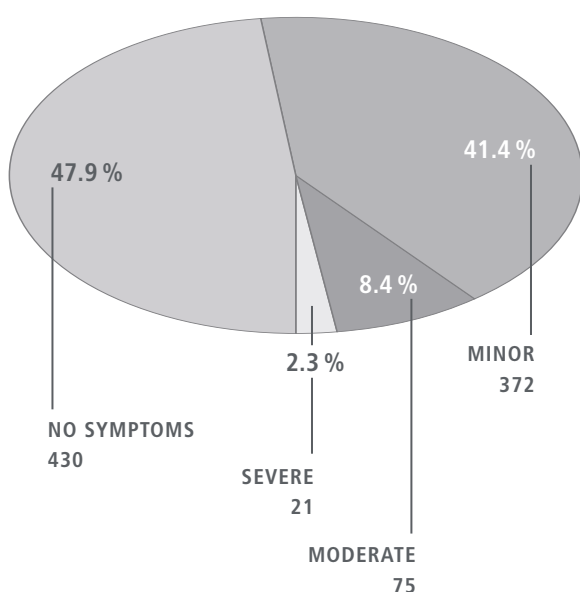
3745 human cases both asymptomatic and symptomatic with sufficient evidence of causality were analysed further with regard to clinical course.

898 cases involved children and 2847 adults. The severity of these cases is documented in Figure 3 with cases categorised as follows: no symptoms, minor, moderate, severe, or fatal. Minor symptoms generally require no treatment; moderate symptoms usually require treatment, and cases with severe symptoms must always be treated.

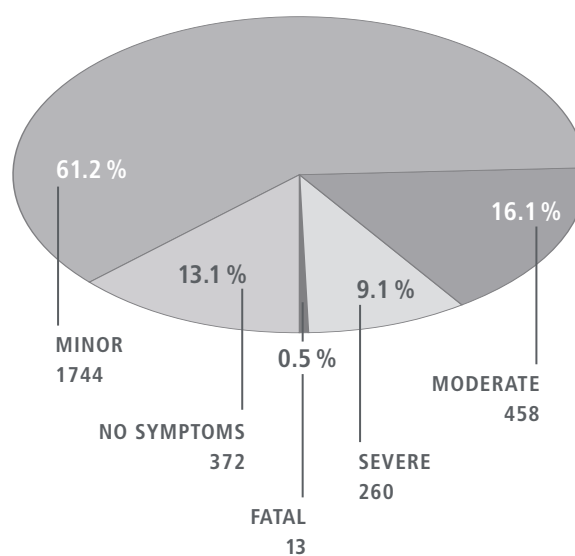


Figure 3  
**Clinical outcome of poisoning cases in children and adults**

**Children** (n = 898)



**Adults** (n = 2847)



Amongst children, half of the cases (430 = 47.9%) were asymptomatic in contrast to adults where only 372 (13.1%) were asymptomatic. Minor symptoms were observed in 372 children (41.4%) and in 1744 adults (61.2%). Moderate symptoms were seen in 75 children (8.4%) and 458 adults (16.1%). Severe poisoning occurred in 21 children (2.3%) and 260 adults (9.1%). 13 cases in adults had a fatal outcome (0.5%).

Of the 3745 cases where causality was confirmed or likely (Table 5), about three fifths involved ingestion of only one toxin. In two fifths of the cases, two or more agents were involved. For the purpose of this report, these cases have been classified according to the most important agent involved. In those cases where follow up information was received and analysed, therapeutic drugs were again the most frequent cause of poisoning (66.6%), followed by technical and industrial products (8.4%), and household products (8.4%).

Table 5

**Frequency of agent group and severity of human poisoning in cases where medical feedback was received and analysed**

Agent group	Adults					Children					Total	
	Severity of poisoning	N	Mi	Mo	S	F	N	Mi	Mo	S		F
Pharmaceuticals	258	1 209	290	198	6	269	210	37	18	–	2 495	66.6 %
Technical and industrial products	47	183	28	7	2	18	22	7	1	–	315	8.4 %
Household products	17	129	23	5	–	62	71	7	–	–	314	8.4 %
Recreational drugs, alcohol	13	79	58	38	4	6	15	6	–	–	219	5.8 %
Plants	5	24	13	3	–	24	17	6	–	–	92	2.5 %
Mushrooms	7	22	21	–	–	7	3	2	1	–	63	1.7 %
Agricultural and horticultural products	11	11	3	3	1	11	3	2	–	–	45	1.2 %
Cosmetics and personal care products	1	11	4	–	–	13	8	2	–	–	39	1.0 %
Venomous animals	2	18	6	1	–	5	5	1	–	–	38	1.0 %
Food and beverages	–	9	1	–	–	3	1	3	–	–	17	0.5 %
Veterinary drugs	1	3	1	1	–	4	1	1	–	–	12	0.5 %
Others or unknown agents	10	46	10	4	–	8	16	1	1	–	96	2.6 %
<b>Total</b>	<b>372</b>	<b>1 744</b>	<b>458</b>	<b>260</b>	<b>13</b>	<b>430</b>	<b>372</b>	<b>75</b>	<b>21</b>	<b>0</b>	<b>3 745</b>	<b>100 %</b>

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



## Animal poisoning

### Animals involved

The 1074 calls received concerned the following animal species: 693 dogs, 249 cats, 25 rabbits/hares, 24 horses/ponies, 16 ruminants, 9 donkeys, 9 guinea pigs, 9 birds, 8 goats, 4 sheep, 3 hedgehogs, 3 monkeys, 2 alpaca, 2 hamster, 2 pigs, 2 tortoises, 1 chincilla, 1 fallow-deer, 1 fish, 1 duck, 1 lizard, 1 mule and 1 rat. The other cases related to several or unknown animal species.

### Agents involved

Table 6 shows the number of calls for the twelve different groups of agents.

Table 6

#### Agents involved in calls concerning animals

Agent groups	No. of cases	
Agricultural and horticultural products	287	26.7 %
Plants	257	24.0 %
Human Pharmaceuticals	172	16.0 %
Household products	147	13.7 %
Food and beverages	45	4.2 %
Veterinary drugs	40	3.7 %
Technical and industrial products	36	3.4 %
Venomous animals	19	1.8 %
Cosmetics and personal care products	13	1.2 %
Recreational drugs, alcohol	8	0.7 %
Mushrooms	7	0.6 %
Others or unknown agents	43	4.0 %
<b>Total</b>	<b>1074</b>	<b>100 %</b>

The calls primarily concerned agricultural and horticultural products (26.7%) followed by calls relating to plants (24.0%), pharmaceuticals (16.0%), household products (13.7%), food and beverages (4.2%) as well as veterinary drugs (3.7%).

## Severity of poisonings

Veterinarians were also requested to submit clinical reports on animal poisoning. We received a total of 207 reports which could be analysed. Of those 87 cases remained without symptoms, 61 were classified as minor and 59 cases had moderate, severe or fatal outcomes (Table 7).

Table 7  
Agent groups and severity of animal poisoning

Agent groups	Outcome					Total	Total
	N	Mi	Mo	S	F		
Agricultural and horticultural products	38	28	8	11	3	88	42.5 %
Pharmaceuticals	24	14	8	–	–	46	22.2 %
Plants	5	4	8	1	–	18	8.7 %
Veterinary products	6	4	3	2	2	17	8.2 %
Household products	7	5	1	1	–	14	6.8 %
Food and beverages (except mushrooms and alcohol)	5	2	2	–	–	9	4.3 %
Technical and industrial products	1	1	2	1	1	6	2.9 %
Venomous animals	1	–	2	–	1	4	1.9 %
Cosmetics and personal care products	–	1	1	–	–	2	1.0 %
Mushrooms	–	–	–	–	1	1	0.5 %
Recreational drugs, alcohol	–	–	–	–	–	0	0.0 %
Others or unknown agents	–	2	–	–	–	2	1.0 %
<b>Total</b>	<b>87</b>	<b>61</b>	<b>35</b>	<b>16</b>	<b>8</b>	<b>207</b>	<b>100 %</b>

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



## Other activities

### Services

We received financial compensation for the following services provided:

1. expert statements with particular emphasis on unpublished experience of the STIC,
2. anonymised case analysis in relation to specific toxins for the pharmaceutical industry,
3. keeping a record of manufacturers' safety data sheets for urgent enquiries from Switzerland and abroad and
4. distribution of printed material, in particular 9284 first aid guidelines.

Under a service level agreement with the Federal Office for Public Health (BAG) granting the STIC access to confidential data of the BAG's product data bank free of charge, the BAG in exchange receives anonymised reports on all serious incidents involving compounds listed under the poisons law. As a new development toxicovigilance by the STIC is now regulated in a contract with the Swiss Agency for Therapeutic Products (Swissmedic).

On behalf of the Swiss Olympic Association the STIC provided a chargeable doping hotline for athletes which was called 633 times.

Use of the emergency telephone service remains free of charge. The same applies to information provided on our web site ([www.toxi.ch](http://www.toxi.ch)) which was visited 120 977 times (compared to 100 461 times in the previous year).

Senior physicians carried out regular consultations in clinical toxicology in the Department for Internal Medicine at the University Hospital Zurich (in particular for the emergency and intensive care units). This includes weekly ward rounds in the Department for Internal Medicine together with staff from the Division of Clinical Pharmacology and Toxicology.

### Teaching and continuing education

The academic members of the STIC actively participate in the teaching and continuing education programme at the Division of Clinical Pharmacology and Toxicology of the University Hospital Zurich as part of the ongoing collaboration.

The Director repeatedly teaches at the post-diploma course «Risk and Safety» of the ETH (Swiss Federal Institute of Technology) and the University of St. Gallen. The experience and technical knowledge available at the STIC also forms an important basis for the training of medical students in clinical toxicology and students of environmental sciences (ETH) in environmental hygiene under the leadership of the Department of Clinical Pharmacology and Toxicology at the University Hospital Zurich. The Director furthermore held a series of public lectures at the University of St. Gallen on poisoning in Switzerland.

Senior medical staff of the STIC regularly contribute to the continuing education of physicians and members of other health care professions and professional organisations in clinical pharmacology and toxicology. In 2004, the STIC was consulted 126 times by the media on current issues in human toxicology.

Research results were presented at the annual congress of the European Association of Poisons Centres and Clinical Toxicologists (EAPCCT) in Strasbourg (four contributions), at the annual conference of the North American Congress of Clinical Toxicology (NACCT) in Seattle (two contributions), at the 72nd annual meeting of the Swiss Society for Internal Medicine and the Section Clinical Pharmacology and Toxicology in Basel (four contributions) and the annual meeting of the Swiss Respiratory Society and Swiss Society for Thoracic Surgery in Crans-Montana (two contributions).



### Research projects

The main emphasis of our research efforts continues to be on dose-effect relationships in human poisoning incidents, in particular relating to drug overdose. Two current projects investigate poisonings with mefenamic acid and trimipramin as part of doctoral theses. In collaboration with the Department of Internal Medicine at the University Hospital Zurich investigations were carried out on poisonings with the illegal drugs gamma hydroxy butyric acid and ecstasy. The study on respiratory problems caused by impregnating aerosols in collaboration with the Swiss Network for Interstitial and Orphan Lung Diseases in Bern has been completed and is currently being analysed.

### Collaborations

In addition to closely collaborating with the Division of Clinical Pharmacology and Toxicology at the University Hospital Zurich, the STIC is a member of the Centre for Xenobiotic and Environmental Risk Research (XERR) at the Swiss Federal Institute of Technology and the University of Zurich. This cooperation not only increases the competence of STIC staff in general and specific issues in toxicology, but also provides the opportunity of redirecting theoretical enquiries to other experts.

Within the framework of the national pharmacovigilance network and under the direction of the Zurich University Division of Clinical Pharmacology and Toxicology a point of contact exists at the STIC Centre for reports on adverse drug reactions.



## The Swiss Antidote Network

In Switzerland, the distribution and storage of antidotes is uniformly organised. Information on the individual antidotes and their availability is published regularly in the Swiss List of Antidotes. Antidotes are classified in three complementary categories based on the frequency of poisonings, where the antidote is being used and its availability. In general antidotes are only included in the list if they do not belong to the standard range available at pharmacies in the community and in hospitals.

The inclusion criteria stipulate that:

1. the substance is used as a classic antidote
2. the substance used as an antidote is not commonly available in hospitals;
3. the quantity of the drug if administered as an antidote exceeds the quantity that is usually available in hospitals for therapeutic use;
4. the use of the drug as an antidote is not well known.

The Swiss List of Antidotes does not aim to be fully comprehensive, but wants to ensure the safe and rapid availability of the selected substances.

**News 2004:** The pharmacy Wülflingen has stopped distribution of antidotes at the end of 2004 due to the increased complexities involved in the task. Warm thanks are due to the owner of Apotheke Wülflingen, Mrs dipl. pharm. C. Fäh, for her dedication and commitment to the provision of antidotes over the years. Procurement and distribution of unlicensed antidotes has been taken over by the pharmacy of the cantonal hospital in Aarau in May 2005. The association of cantonal health directors (GDK) has supported this change and reaffirmed and strengthened the commissioning of the working party «Antidota» GSASA-STIZ to secure the provision of antidotes within the country. Even if the Swiss Agency for Therapeutic Products has suspended the trade with some of these antidotes in the meantime, their supply is secure because Article 36 of the Medicines Authorisation Regula-

Table 8

### The categories of antidotes on the Swiss Antidote List

**Basic supply available at pharmacies in the community:** activated charcoal, biperidene (tablets), calcium gluconate (hydrogel), simeticone (drops or tablets).

**Basic supply available at hospital pharmacies:** amyl nitrite, atropine (1 ml), biperidene (ampoules), calcium gluconate (ampoules), colestyramine, dantrolene, ethanol, flumazenil, glucagon, magnesium, N-acetylcysteine (vials and powder), naloxone, sodium bicarbonate, sodium polystyrene sulfonate, neostigmine, phytomenadione (vit. K), pyridoxine (vit. B6).

**Additionally available at regional centres:** atropine (100 ml), calcium-disodium-EDTA, desferrioxamine, digitalis antidote, dimethylaminophenol (4-DMAP), dimercaptopropane sulfonate (DMPS, Unithiol), dimercaptosuccinic acid (DMSA, Succimer), iron-(III)-hexacyanoferrate(II) (Prussian blue), fomepizole, glycine, hydroxycobalamine, methylene blue, obidoxime, phentolamine, physostigmine salicylate, silibinin, sodium thiosulfate.

Regional centres and their telephone numbers are included in the list.

**Special supplies:** The availability of antivenins for venomous snake bites can be seen on the list of the Swiss Antivenin Depot Network ANTIVENIN-CH ([www.toxi.ch](http://www.toxi.ch)).

Botulinus-Antitoxin is stored at the Swiss Army's pharmacy and can be obtained via STIC.

tions has been modified so that medical personnel can also import directly from countries with similar regulations for emergencies.

The dosage regimen for **obidoxim** has been amended in line with recommendations recently published in scientific journals. The dosage for **calcium** (for poisonings with hydrofluoric acid or calcium channel blockers) has also been brought in line with recommendations in current textbooks. **Glycin** as an antidote in severe salicylate poisonings has been removed from the list as the data available regarding its effectiveness has not sufficiently improved over the last few years. Recently, **octreotid** has been introduced for treatment of acute intoxication with antidiabetics of the sulfonyl urea type to avoid rebound hypoglycaemia. Its mode of action is to reduce the release of insulin from the pancreas. There are recent reports on the successful use of high dose **insulin** in combination with glucose in poisonings with calcium channel blockers. First indications on the effectiveness of the so-called HIE (hyperinsulinaemia/euglycaemia) come from animal models, but its precise mechanism is unclear so far.

Decontaminants and antidotes for radioactive materials are stored at the Cantonal Pharmacy in Zurich, and can be ordered by hospitals and other pharmacies when required.

The Swiss List of Antidotes is updated annually by a special working party of the STIC and the Swiss Association of Hospital Pharmacists. It is published in the Bulletin of the Swiss Federal Office of Public Health and can also be viewed on the Internet at «[www.toxi.ch](http://www.toxi.ch)» (Antidotes) or at «[www.pharmavista.net](http://www.pharmavista.net)».

Members of the working party are M. Eggenberger (Aarau), C. Föh (Winterthur), S. Mühlebach (Berne), N. Vernaz (Genève), Ch. Rauber-Lüthy (Zurich), A. Züst (Zurich) and H. Kupferschmid (Chairman, Zurich).

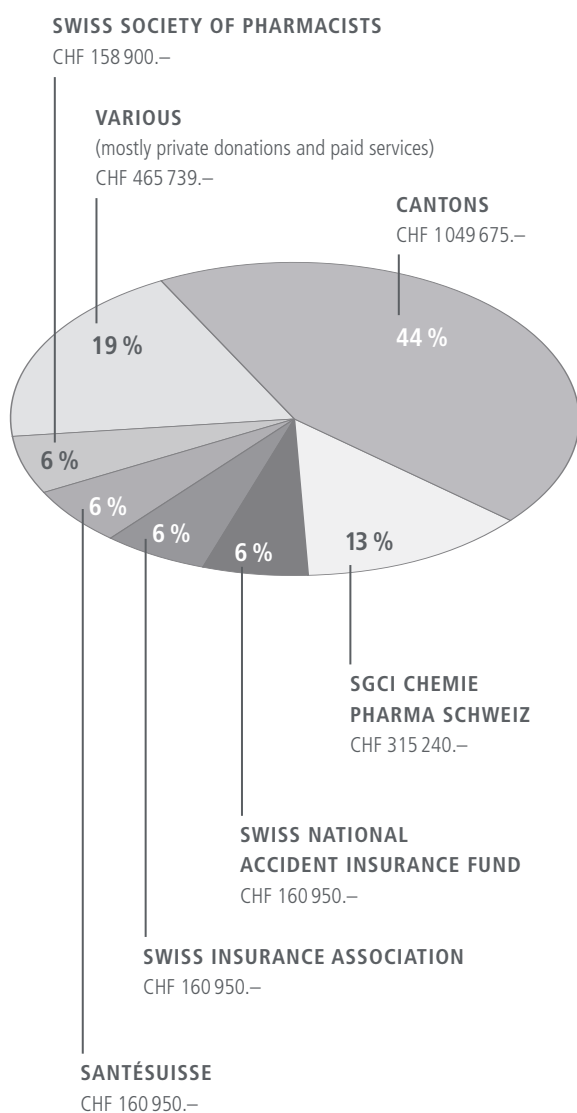


## Publications

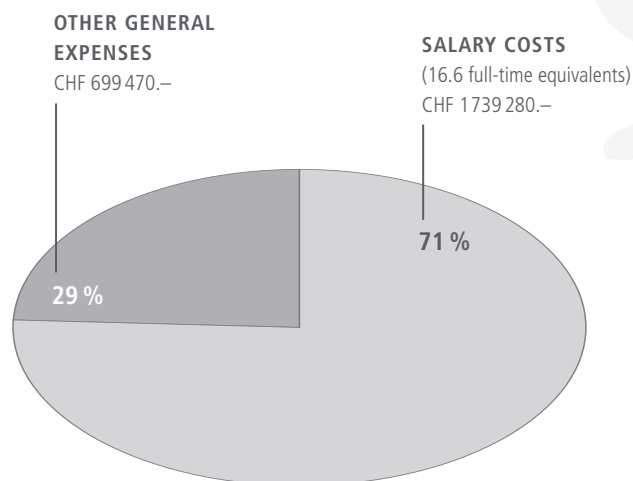
	Order number		Order number
<b>A case of disseminated intravascular coagulation after intravenous injection of methadone capsules (Abstract).</b> Ducommun J., Rauber C., Egli G., Bombeli T., Zürcher-Zenkhusen R.M. Schweizerisches Medizin-Forum 4 (Suppl 17), 8, 2004.	1-04	<b>Acute respiratory syndrome after inhalation of waterproofing sprays: Retrospective analysis of 43 cases (Abstract).</b> Lazor R., Howarth N., Heinzer R., Paky A., Sauty A., Kupferschmidt H., Fitting J.W. Swiss Medical Weekly 134, (Suppl 139), 21, 2004.	13-04
<b>Niereninsuffizienz nach akzidenteller Einnahme von Ethylenglykol aus einer CocaCola-Flasche (Abstract).</b> Egli G.H., Rauber-Lüthy C., Braun M., Degen T., Meier-Abt P. Schweizerisches Medizin-Forum 4 (Suppl 17), 39, 2004.	2-04	<b><math>\gamma</math>-hydroxybutyrate (GHB) and <math>\gamma</math>-butyrolactone (GBL): analysis of overdose cases reported to the Swiss Toxicological Information Centre.</b> Liechti M.E., Kupferschmidt H. Swiss Medical Weekly 134, 534-537, 2004.	14-04
<b>Acute Opiate Withdrawal After Consumption of Naltrexone-Tainted Cocaine (Abstract).</b> Faas A., Weber M., Rentsch K., Ruggieri F., Kupferschmidt H. Journal of Toxicology – Clinical Toxicology 42 (4), 508, 2004.	3-04	<b><math>\gamma</math>-Hydroxybutyrate (GHB) and <math>\gamma</math>-Butyrolactone (GBL) Poisoning (Abstract).</b> Liechti M.E., Kupferschmidt H. Journal of Toxicology – Clinical Toxicology 42 (5), 758-759, 2004.	15-04
<b>Antidote bei Vergiftungen 2004.</b> Fäh C., Rauber-Lüthy Ch., Mühlebach S., Züst A., Eggenberger M., Kupferschmidt H. Bulletin Bundesamt für Gesundheit 5, 70-76, 2004.	4-04	<b>Der Wald, ein gefährlicher Spielplatz?</b> Meier-Abt A. Forum News März (1), 21-25, 2004.	16-04
<b>Severe chronic-lead intoxication after self-medication with Jambroli<sup>®</sup>, an ayurvedic anti-diabetes drug and its combined chelation treatment with EDTA and DMSA (Abstract).</b> Fuchs P., Hess W., Hess O., Schmid H.R., Rauber C., Beer J.H. Schweizerisches Medizin-Forum 4 (Suppl 17), 12, 2004.	5-04	<b>Is There an Experimental Basis for the Use of Antidotes in Amatoxin Poisoning? (Abstract)</b> Meier-Abt P.J. Journal of Toxicology – Clinical Toxicology 42 (4), 460, 2004.	17-04
<b>Physicians' Evaluation of a National Poisons Information Centre (Abstract).</b> Goetschi S., Kupferschmidt H. Journal of Toxicology – Clinical Toxicology 42 (4), 503-504, 2004.	6-04	<b>Zum Rücktritt von J.-P. Lorent als Direktor.</b> Merki F., Kupferschmidt H. Schweizer Apothekerzeitung 142 (24), 949, 2004.	18-04
<b>Acute respiratory toxicity after use of waterproofing textile and leather sprays: patient and exposure data (Abstract).</b> Kupferschmidt H., Namer E., Lazor R. Swiss Medical Weekly 134 (Suppl 139), 20, 2004.	7-04	<b>The Clinical Picture of Olanzapine Poisoning with Special Reference to Fluctuating Mental Status.</b> Palenzona S., Meier P.J., Kupferschmidt H., Rauber-Lüthy C. Journal of Toxicology – Clinical Toxicology 42 (1), 27-32, 2004.	19-04
<b>Epidemy of acute respiratory illness linked to use of water proofing textile and leather spray (Abstract).</b> Kupferschmidt H. Schweizerisches Medizin-Forum 4 (Suppl 17), 25, 2004.	8-04	<b>The Clinical Picture of Olanzapine Poisoning with Special Reference to Fluctuating Mental Status.</b> Palenzona S. Dissertation Universität Zürich, 2004, 7 S.	20-04
<b>Antidotes contre les intoxications 2004. Création du réseau suisse des dépôts de sérums antivenimeux.</b> Kupferschmidt H. Médecine & Hygiène 2491, 1539, 2004.	9-04	<b>A Case of Disseminated Intravascular Coagulation (DIC) After Intravenous Injection of Methadone Capsules (Abstract).</b> Rauber-Lüthy C., Egli G., Bombeli T., Ducommun J., Zürcher-Zenkhusen R., Meier P. Journal of Toxicology – Clinical Toxicology 42 (5), 722-723, 2004.	21-04
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		<b>The publications listed above may be ordered quoting the relevant order numbers via telephone (+41 44 634 10 20), fax (+41 44 252 88 33) or by e-mail to info@toxi.ch.</b>	
		<b>In addition, the revised leaflet about first aid and poisoning prevention is available as well as emergency telephone number stickers in German, French and Italian. Dissertations are only available on loan.</b>	
		<b>If you require several documents, please order by mail, enclosing stamps to the value CHF 4.50 per document, or the equivalent in international reply coupons.</b>	

## Income and expenditure

Income CHF 2517404.–



Expenditure CHF 2438750.–





## ■ Donations

Sunrise TDC Switzerland AG (internet server hosting)	14 000	Robapharm AG	1000
City of Zurich	10 000	Sanitized AG	1000
Galenica AG	10 000	Schweizerhall Chemical Inc.	1000
Federation of the Swiss Veterinary Surgeons	8 000	Staerkle & Nagler AG	1000
Colgate-Palmolive AG	3 000	Streuli G. & Co. AG	1000
Henkel & Cie AG	3 000	Swiss Society of Druggists	1000
Lever Fabergé GmbH	3 000	Unilever Cosmetics International SA	1000
Procter & Gamble AG	3 000	Victorinox AG	1000
The Swiss Cosmetic and Detergent Association	3 000	Voigt AG	1000
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Swiss Petroleum Industry Association	1 500		
Unione Farmaceutica Distribuzione SA	1 500		
3M (Switzerland) AG	1 000		
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Astra Zeneca AG	1 000		
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Smaller contributions not listed here are frequent and very welcome. We extend grateful thanks to all donors.

Thanks to the generous support of the Federal Health Agency, the OPO and the Ernst Göhner Foundations we have been able to realise «Toxli», the online game for prevention of poisoning in preschool children.

## Support

The Swiss Toxicological Information Centre (STIC) is supported by a private charitable foundation and by the Swiss Conference of the Cantonal Directors of Public Health (CDS).

The supporting organisations are:

- the Swiss Society of Pharmacists (SSP)
- the SGCI Chemie Pharma Schweiz
- the Swiss National Accident Insurance Fund (SNAIF)
- the Swiss Insurance Association (SIA)
- the santésuisse (SAS).

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## Advisers

Numerous experts from hospitals, institutes, state and federal organisations act as honorary advisers, most notably Jean-Pierre Lorent (former Director of the STIC) and Dr. Martin Wilks (Syngenta).

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