

Managing Animal Experimentation and 3R In your Research

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PHYM/SCMU

2025

Plan of the day

1. Animal experimentation in Switzerland
2. 3R and OSAV rules for the Animal experimentation
3. Animal experimentation in Geneva
4. Animal experimentation at the University

Coffee break

Plan of the day

5. Animal experimentation at the CMU
6. Animal experimentation in the PHYM department
7. Guidelines for managing the 3Rs and animal welfare
 - Statistics to **reduce**
 - Avoiding stress and pain to **refine**
 - Detecting pain in mice
 - Advantages for 3Rs by using the core facilities/services

1. Animal experimentation in Switzerland



1. Animal experimentation in Switzerland

<https://www.blv.admin.ch/blv/en/home/tiere/tierversuche.html>

► The Federal Council ► FDHA ► FSVO

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 Schweizerische Eidgenossenschaft
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Confederazione Svizzera
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Federal Food Safety and Veterinary Office

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Food and nutrition	Commodities	Animals	Import and Export	About the FSVO
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FSVO > Animals > Animal experimentation



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**Office fédéral de la sécurité alimentaire
et des affaires vétérinaires**





1. Animal experimentation in Switzerland

In Switzerland, animal experiments may only be performed if no alternative methods are available. Equally strict rules apply to laboratory animal husbandry as to the training and continuing education of the researchers working with animals.

En Suisse, les expérimentations animales ne peuvent être réalisées que si aucune méthode alternative n'est disponible. Des règles tout aussi strictes s'appliquent à l'élevage d'animaux de laboratoire quant à l'entraînement et à la formation continue des chercheurs travaillant avec des animaux.

Source: <https://www.blv.admin.ch/blv/en/home/tiere/tierversuche.html>



1. Animal experimentation in Switzerland

LPA : Loi fédérale sur la protection des animaux du 16 décembre 2005

ANIWA : Animal Welfare Act

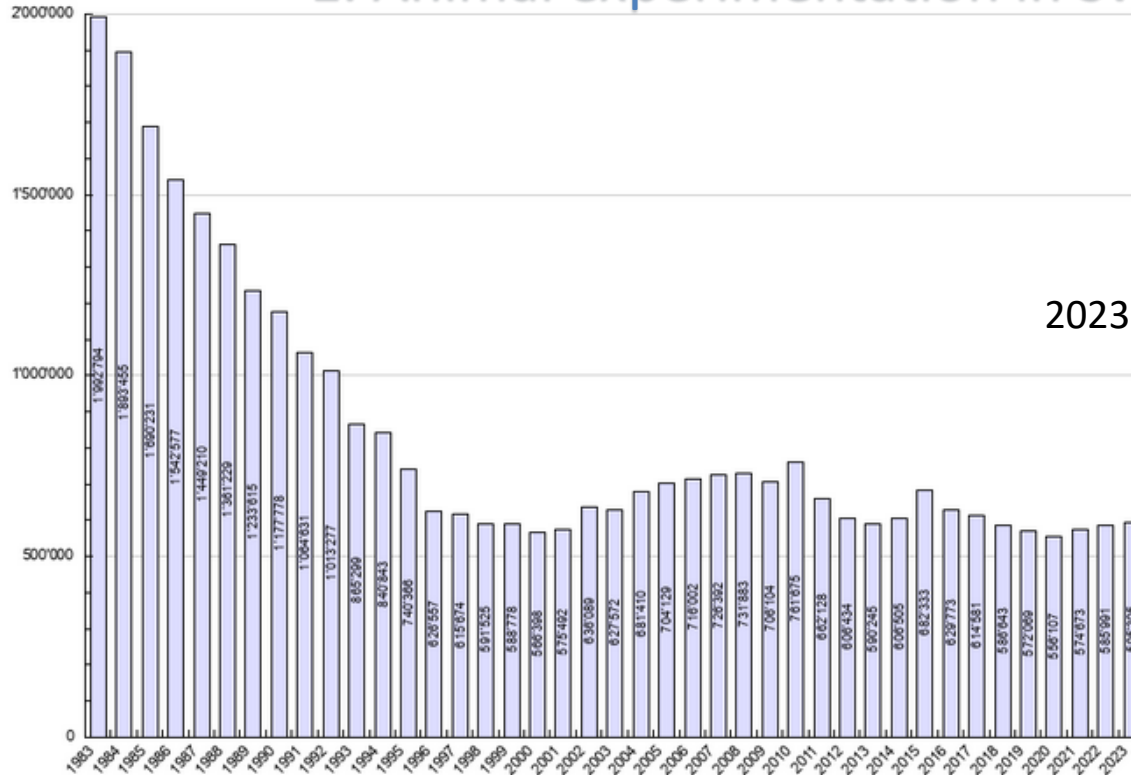
[Ordonnance sur la protection des animaux](#) (OPAn 2008)

[Ordonnance sur l'expérimentation animale](#) (2010).



Source: <https://www.fedlex.admin.ch/eli/cc/2008/414/en>

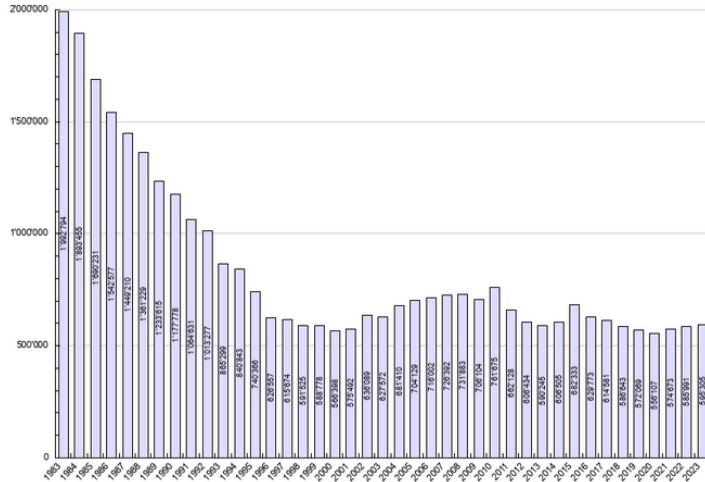
1. Animal experimentation in Switzerland



2023 : 595'000 animals used

Source: <https://www.tv-statistik.ch/fr/statistique-simples/>

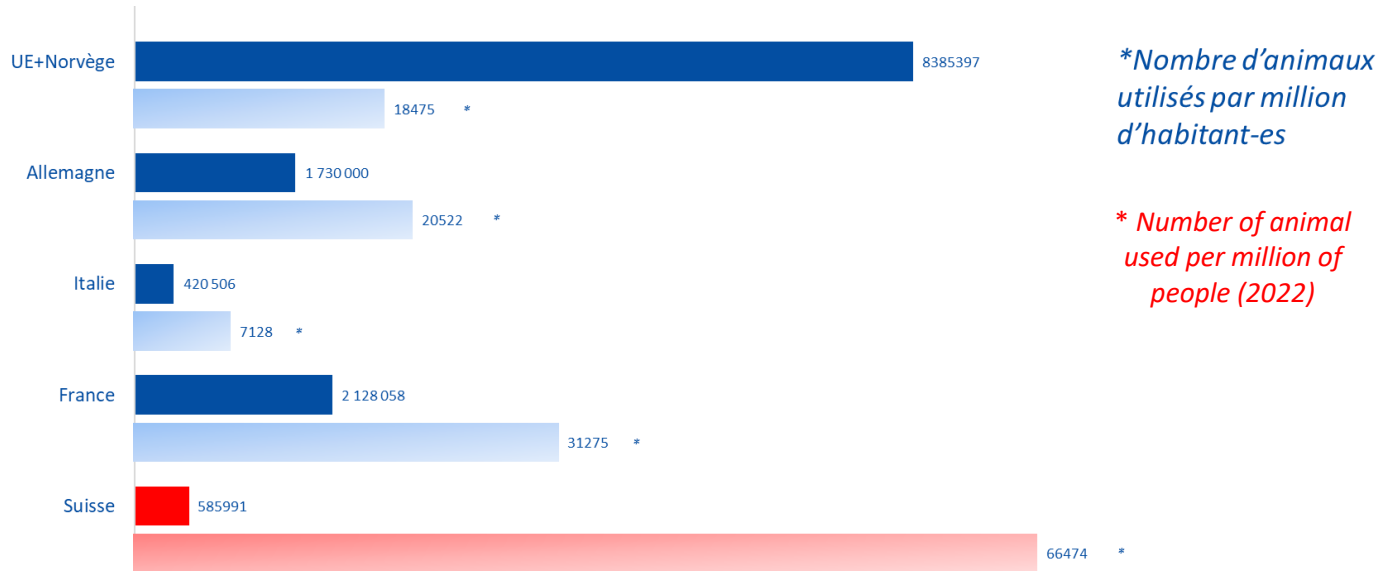
1. Animal experimentation in Switzerland



	A	B	C	D	E	
1	su-f-01.02.04.05 Bilan de la population résidante permanente ¹ , de 1861 à 2019					
2		Etat de la population au 1er janvier ²	Composantes de l'évolution de la population			
3			Naissances vivantes ³	Décès ³	Accroissement naturel ³	Im
4						
5						
127	1982	6 372 904	74 916	59 204	15 712	
128	1983	6 409 713	73 659	60 756	12 903	
129	1984	6 427 833	74 710	58 602	16 108	

Source : <https://www.bfs.admin.ch/bfs/fr/home/statistiques/population.html>

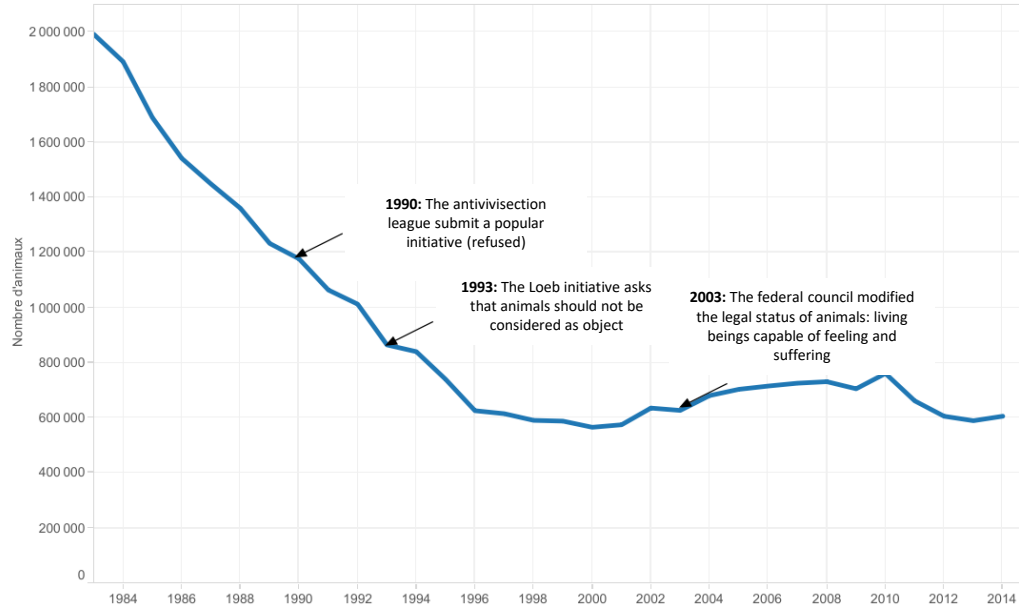
1. Animal experimentation in Switzerland



Sources: OSAV, 2022 ; Commission Européenne, 2022

1. Animal experimentation in Switzerland

Nombre d'animaux utilisés pour la recherche entre 1983 et 2014



Source: <https://www.tv-statistik.ch/fr/statistique-simples/>

1. Animal experimentation in Switzerland

Initiative populaire du 18.03.2019 «Oui à l'interdiction de l'expérimentation animale et humaine – Oui aux approches de recherche qui favorisent la sécurité et le progrès»

Détails sur l'initiative populaire

Le projet a été rejeté

Electeurs		
Total électeurs	5'532'520	
dont Suisses de l'étranger	208'597	
Participation		
Bulletins rentrés	2'445'370	
Participation	44.20%	
Bulletins n'entrant pas en ligne de compte		
blancs	42'339	
nuls	8'485	
Bulletins entrant en ligne de compte		
Bulletins valables	2'394'546	
Oui	499'485	20.9%
Non	1'895'061	79.1%

Popular vote in Feb. 2022

Source:
<https://www.admin.ch/gov/fr/accueil/documentation/votations/20220213/initiative-populaire-interdiction-de-l-experimentation-animale-et-humaine.html>

1. Animal experimentation in Switzerland

A new popular initiative submitted to the Federal Chancellery on 11 November 2024 calls for a ban on animal testing and an end to the keeping, breeding and trade of animals for these purposes.

1. Animal experimentation in Switzerland

A new popular initiative submitted to the Federal Assembly on 11 November 2024 calls for a ban on animal testing and an end to the keeping, breeding and trade of animals for these purposes.



1. Animal experimentation in Switzerland

A new popular initiative submitted to the Federal Chancellery on 11 November 2024 calls for a ban on animal testing and an end to the keeping, breeding and trade of animals for these purposes.



19.02.2025

Le Conseil fédéral

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Confédération suisse
Confederazione Svizzera
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Le Conseil fédéral
Le portail du Gouvernement suisse

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Chercher

Thèmes A-Z

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Communiqués du Conseil fédéral

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Le Conseil fédéral rejette l'initiative populaire « Oui à un avenir sans expérimentation animale »



1. Animal experimentation in Switzerland



de fr it en



Animal experimentation explained

Animal experimentation: are we allowed to do that? In this thematic portal, researchers of the Swiss Laboratory Animal Science Association give answers to frequently asked questions.

Image: kwanchaift, stock.adobe.com

Benefits



Non-animal methods



Relevance animal research



Research with primates



Source: <https://naturalsciences.ch/animal-experimentation-explained>



1. Animal experimentation in Switzerland



Source: <https://sgv.org>



1. Animal experimentation in Switzerland

3 R Swiss 3R
C C Competence
Centre

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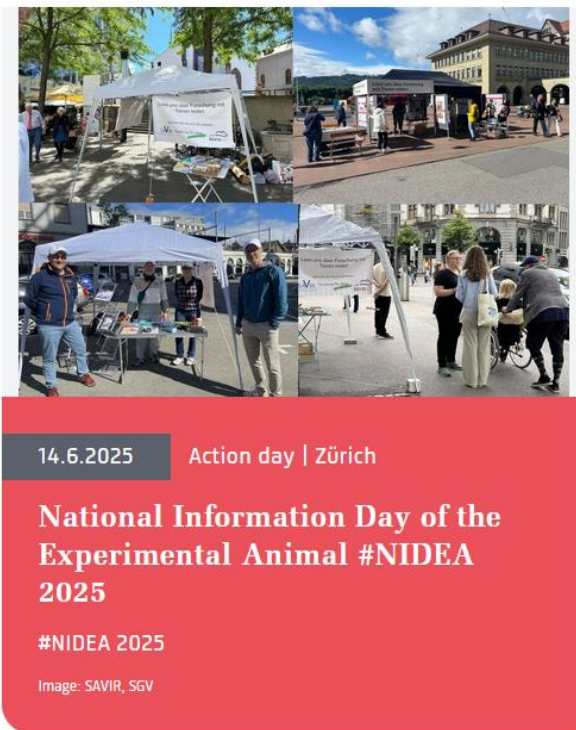
**DRIVING 3RS
ADVANCEMENT
FOR BETTER
ANIMAL WELFARE
AND SCIENCE**

A photograph of a small white mouse with red eyes being gently held in the palm of a hand wearing a blue nitrile glove. The background is blurred, showing a white lab coat.

Source: <https://swiss3rcc.org>



1. Animal experimentation in Switzerland



14.6.2025

Action day | Zürich

**National Information Day of the
Experimental Animal #NIDEA
2025**

#NIDEA 2025

Image: SAVIR, SGV

2. 3R and OSAV rules for the Animal experimentation



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et des affaires vétérinaires**



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**Federal Food Safety and Veterinary
Office**

Source: <https://www.blv.admin.ch/blv/en/home/tiere/tierversuche.html>



2. 3R and OSAV rules for the Animal experimentation

Replace, Reduce, Refine

Researchers in Switzerland are obliged to keep animal experiments to a minimum. Rather than animal experiments, alternative methods must be used where possible. The 3R principles (replace, reduce, refine) call for the development and use of **alternatives** to animal experiments, the **reduction** of animal experiments to the absolute minimum and **improvements** in experiments to ensure that animals are subjected to a **minimum of pain**.



2. 3R and OSAV rules for the Animal experimentation

Ultimately, the purpose is to assess whether the gain in knowledge justifies the constraint suffered by the animals. The expected benefits to society brought about by animal experiments must be greater than the suffering of the animals or the violation of their dignity.

Benefits vs. Constraints



Source: <https://www.blv.admin.ch/blv/en/home/tiere/tierversuche.html>



2. 3R and OSAV rules for the Animal experimentation

Definitions

- **Suffering**
 - Emotional status of the animal linked to pain, distress and discomfort
- **Pain**
 - Physiologic response
 - Acute
 - Chronic



2. 3R and OSAV rules for the Animal experimentation

Definitions

Degree of severity= Constraint suffered by animals

Degré de gravité = Contraintes subies par l'animal

Source: <https://www.blv.admin.ch/blv/en/home/tiere/tierversuche.html>



2. 3R and OSAV rules for the Animal experimentation

Degree of severity

According to article 24 of the Animal Experimentation Ordinance, the constraint suffered by animals caused by interventions or measures taken as part of animal experiments is divided into **four constraint categories**.



Source: <https://www.blv.admin.ch/blv/en/home/tiere/tierversuche.html>



2. 3R and OSAV rules for the Animal experimentation

Degree of severity 0

(11% at UNIGE)

No constraint/observational studies:

Interventions and handling of animals which do not subject the animals to any pain, suffering or injury, do not cause them to suffer fear and do not impair their general state of health.

Les interventions et manipulations d'animaux qui ne soumettent les animaux à aucune douleur, souffrance ou blessure, ne leur font pas ressentir de peur et n'altèrent pas leur état général de santé.

Source: <https://www.blv.admin.ch/blv/en/home/tiere/tierversuche.html>



2. 3R and OSAV rules for the Animal experimentation

Degree of severity 0

Behavior observation

Mutant mice without illness or clinical troubles

Post-mortem tissue analysis

i.v. or i.p. injection of a small volume with more than 24hrs interval

Example: Sampling of femurs in GMO mice for bone marrow extraction and study of the calcium functions of neutrophils by fluorescence microscopy

Source: <https://www.blv.admin.ch/blv/en/home/tiere/tierversuche.html>



2. 3R and OSAV rules for the Animal experimentation

Degree of severity 1

(34% at UNIGE)

slight constraint:

Interventions and handling of animals for experimental purposes which cause **slight** pain or injury or slight impairment of their general state of health.

Interventions et manipulations d'animaux à des fins expérimentales qui provoquent de **légères** douleurs ou blessures ou une légère altération de leur état général de santé.

Source: <https://www.blv.admin.ch/blv/en/home/tiere/tierversuche.html>



2. 3R and OSAV rules for the Animal experimentation

Degree of severity 1

Repeated blood samples within 24 hours

Modified food (high fat/high sucrose diet)

Immuno deficient mice

Obese mice without diabetes

Catheters in peripheral blood vessels

s.c. implantation of tumors/osmotic minipumps

Example: Induction of KO by s.c. Tamoxifen implant and Glucose Tolerance Tests realized at different age

Source: <https://www.blv.admin.ch/blv/en/home/tiere/tierversuche.html>



2. 3R and OSAV rules for the Animal experimentation

Degree of severity 2

(46% at UNIGE)

moderate constraint:

Interventions and handling of animals for experimental purposes which cause **short-term moderate or medium- to long-term slight** pain, suffering or injury, **short-term moderate** fear or **short to medium-term severe** impairment of their general state of health.

Interventions et manipulations d'animaux à des fins expérimentales qui provoquent des **douleurs, des souffrances ou des blessures, modérées à court terme ou légères à moyen et long terme**, une **peur modérée à court terme** ou une **altération grave à court et moyen terme** de leur état de santé général.

Source: <https://www.blv.admin.ch/blv/en/home/tiere/tierversuche.html>



2. 3R and OSAV rules for the Animal experimentation

Degree of severity 2

Transplantation of pancreatic islets on diabetic animals

Surgeries

Obese mice with Diabetes

Muscular atrophy

i.p. minipumps

Force feeding

Telemetric implants

Example: Induction of nephropathy by unilateral ureter obstruction in kidney specific KO mice

Source: <https://www.blv.admin.ch/blv/en/home/tiere/tierversuche.html>



2. 3R and OSAV rules for the Animal experimentation

Degree of severity 3

(9% at UNIGE)

Severe constraint:

Interventions and handling of animals for experimental purposes which cause **medium to long-term moderate** pain or **severe** pain, long-term moderate to severe suffering, medium-to long-term moderate injury or severe injury, long-term severe fear or severe impairment of their general state of health.

Interventions et manipulations d'animaux à des fins expérimentales qui provoquent une **douleur modérée à moyen et long terme** ou une **douleur intense**, une **souffrance modérée à grave à long terme**, une **blessure modérée à moyen et long terme** ou une **blessure grave**, une **peur grave à long terme** ou une **déficiencia grave** de leur état de santé général.

Source: <https://www.blv.admin.ch/blv/en/home/tiere/tierversuche.html>



2. 3R and OSAV rules for the Animal experimentation

Degree of severity 3

Animal models of multiple sclerosis

Cardiac surgeries

Kidney diseases

Osteoporosis

KO mice with severe deficiencies

Example: Quantification of cell survival by multiple bioluminescence bio-imaging after transplantation in immunodeficient mice previously submitted to bilateral muscular lesions

Source: <https://www.blv.admin.ch/blv/en/home/tiere/tierversuche.html>

Number of animals according to animal species and degree of severity (Switzerland)

Degré	0		1		2		3		Total	Variation 2022-2023
Souris	64'545	17.9 %	114'769	31.8 %	157'511	43.7 %	23'616	6.6 %	360'441	+ 2.3 %
Rats	35'907	73.7 %	6'618	13.6 %	5'436	11.2 %	757	1.6 %	48'718	-4 %
Hamster			20	18.9 %	84	79.2 %	2	1.9 %	106	-25.4 %
Cobayes	86	81.1 %	20	18.9 %					106	-45.9 %
Autres rongeurs			18	29 %	38	61.3 %	6	9.7 %	62	-10.1 %
Lapins	213	42.1 %	58	11.5 %	181	35.8 %	54	10.7 %	506	-12.9 %
Chiens	1'743	90.5 %	178	9.2 %	5	0.3 %			1'926	-6.3 %
Chats	167	44.8 %	206	55.2 %					373	+ 20.7 %
Primates	246	92.1 %	6	2.2 %	15	5.6 %			267	+ 33.5 %

Source: <https://www.blv.admin.ch/blv/en/home/tiere/tierversuche.html>

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Source: <https://www.blv.admin.ch/blv/en/home/tiere/tierversuche.html>



2. 3R and OSAV rules for the Animal experimentation

Degree of severity also depends of the number/frequency of acts done on the same mouse during its life



Addition of degree 1 experiments could be considered as degree 2



2. 3R and OSAV rules for the Animal experimentation



End of 2018 = new classification applied to all new authorizations issued

Procedures previously considered as level 2 then considered as level 3 (particularly in the field of Neurosciences)



2. 3R and OSAV rules for the Animal experimentation



A degree 3 does not mean that your experiment will not be accepted (no need to “hide” some experiments)

The DS will not influence how your FormA will be considered

The most important thing : your DS should be evaluated correctly

Source: <https://www.blv.admin.ch/blv/en/home/tiere/tierversuche.html>



2. 3R and OSAV rules for the Animal experimentation

More information

In detail

Forms

Statistics

Links

Legislation

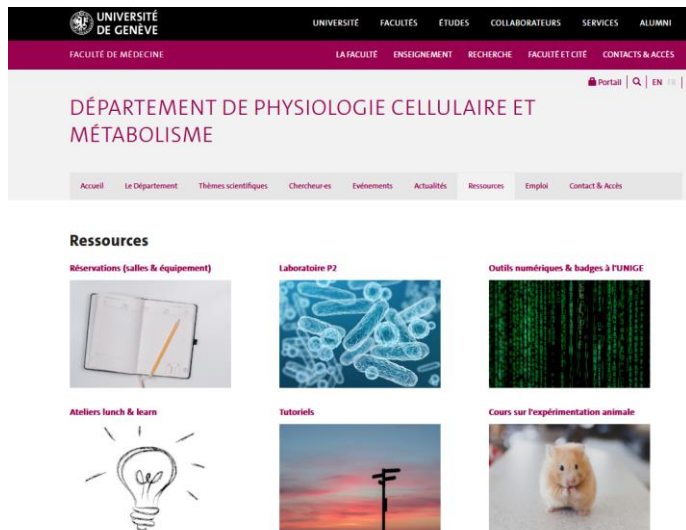
 [Technical information Severity degrees 1.04 \(PDF, 710 kB, 30.08.2018\)](#)

Source: <https://www.blv.admin.ch/blv/en/home/tiere/tierversuche.html>



2. 3R and OSAV rules for the Animal experimentation

To help you to establish the DS of your exp: see PHYM department webpage for the pdf file





2. 3R and OSAV rules for the Animal experimentation

To solve the “problem”

- Introduce rest period between two tests
- Equilibrate experiments between several groups
- Evaluate DS accordingly = include a score sheet = define endpoints



2. 3R and OSAV rules for the Animal experimentation

Endpoints can also be decisive for limiting the degree of severity:

The researchers must specify precisely the levels of constraint or results which require an animal experiment to be aborted.

Les chercheurs doivent fournir précisément les niveaux de contrainte ou de résultats qui nécessitent l'abandon d'une expérimentation animale.

Source: <https://www.blv.admin.ch/blv/en/home/tiere/tierversuche.html>



2. 3R and OSAV rules for the Animal experimentation

Definitions

Endpoints: the earliest indicator of possible pain and/or distress in a laboratory animal. The appearance of this indicator leads to the implementation of immediate measures, aimed at avoiding or reducing this suffering, while taking into account the ethical requirements and scientific objectives of the study. These measures may be euthanasia or removing the animal from pain (stopping the study, treating the pain) (Hendriksen and Morton, 1999).

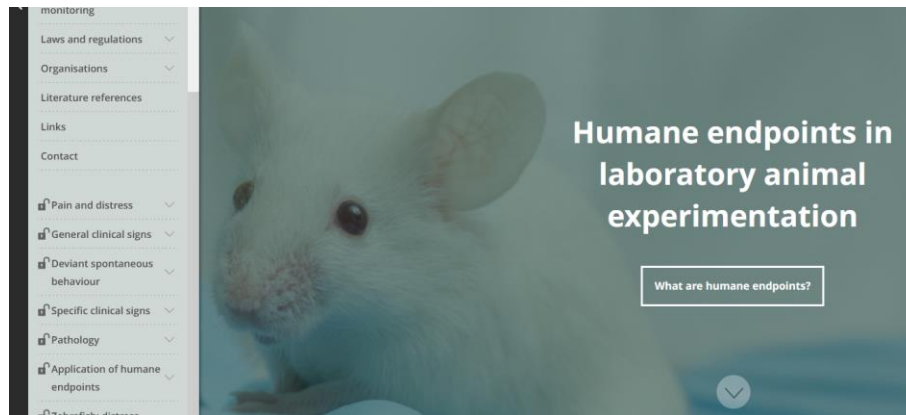
Point limite: l'indicateur le plus précoce d'une éventuelle douleur et/ou détresse chez un animal de laboratoire. L'apparition de cet indicateur entraîne la mise en application de mesures immédiates, visant à éviter ou réduire cette souffrance, tout en tenant compte des exigences éthiques et des objectifs scientifiques de l'étude. Ces mesures peuvent être l'euthanasie ou la soustraction de l'animal à la douleur (arrêt de l'étude, traitement de la douleur) (Hendriksen et Morton, 1999).

Source: <https://www.blv.admin.ch/blv/en/home/tiere/tierversuche.html>



2. 3R and OSAV rules for the Animal experimentation

«Humane endpoints» : source of information on the detection of pain, distress and so on in laboratory animals. Tips, videos, information.... → helps define humane endpoints



Source: <https://www.humane-endpoints.info/en>

3. Animal experimentation in Geneva



POST TENEBRAS LUX



3. Animal experimentation in Geneva

SCAV: service de la consommation et des affaires vétérinaires

Qui sommes-nous ?

- Département de la sécurité, de la population et de la santé (DSPS)
 - Direction Générale de la Santé
 - Service de la consommation et des affaires vétérinaires

Source: <https://www.ge.ch/organisation/service-consommation-affaires-veterinaires>



3. Animal experimentation in Geneva

SCAV: service de la consommation et des affaires vétérinaires

Nos missions

Le service de la consommation et des affaires vétérinaires (SCAV) agit en faveur de la santé des consommateurs et des animaux. Le SCAV est l'autorité de contrôle des denrées alimentaires et des objets usuels ainsi que des affaires vétérinaires du canton.

Source: <https://www.ge.ch/organisation/service-consommation-affaires-veterinaires>



3. Animal experimentation in Geneva

SCAV: service de la consommation et des affaires vétérinaires

In 2023, the SCAV issued 216 decisions concerning animal experiments, with an average processing time of 29 days among the 246 received.

In order to guarantee animal welfare, 60% of the authorizations were accompanied by restrictive charges addressed to the researchers.

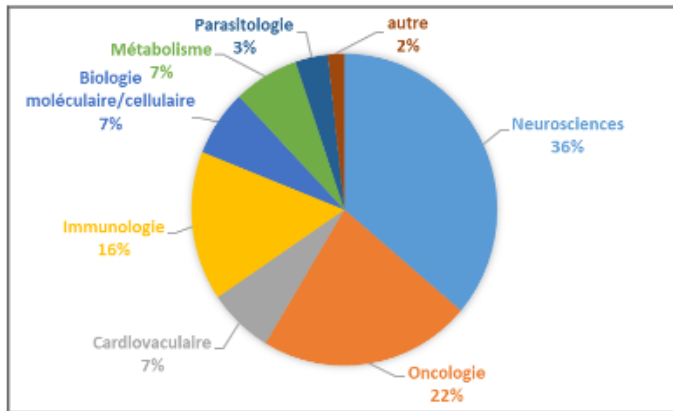
En 2023, le SCAV a émis 216 décisions concernant des expériences sur animaux, avec un temps moyen de traitement de 29 jours parmi les 246 reçues.

Afin de garantir le bien-être animal 60 % des autorisations étaient assorties de charges contraignantes adressées aux chercheurs.

Source: <https://www.ge.ch/organisation/service-consommation-affaires-veterinaires>

3. Animal experimentation in Geneva

SCAV: service de la consommation et des affaires vétérinaires



Répartition des nouvelles demandes d'expérimentation animale traitées en 2023, selon leur domaine.

Source: <https://www.ge.ch/organisation/service-consommation-affaires-veterinaires>

3. Animal experimentation in Geneva

SCAV: service de la consommation et des affaires vétérinaires

Cantonal veterinarian
Dr. vet. Michel Rérat



Scientific Advisor
Dr. Anthony Carrard



Source: <https://www.ge.ch/organisation/service-consommation-affaires-veterinaires>

3. Animal experimentation in Geneva

CCEA: Cantonal Commission for Animal experimentation

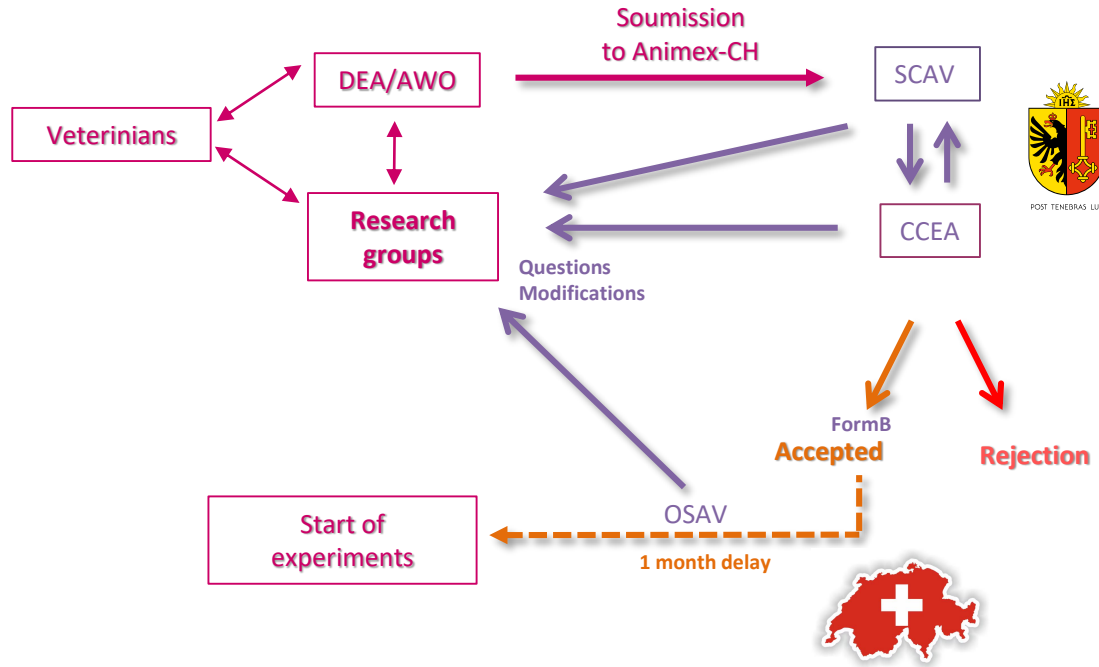
- Committee of 7 people
 - A representative of the University (Pre Gaby Palmer from the 1st of August 2023)
 - A bio-ethicist
 - A specialist in alternative techniques
 - Two representatives of the animal defense leagues
 - Two representatives of Swiss veterinarians



Source: <https://www.ge.ch/organisation/service-consommation-affaires-veterinaires>

3. Animal experimentation in Geneva

FormA



DEA: direction de l'expérimentation animale de l'université

AWO: Animal welfare officer

CCEA: Cantonal commission for Animal experimentation

3. Animal experimentation in Geneva

FormA: Implicated people

- Anyone performing experiments on live animals must be included in the FormA, also people from core facilities or services such as the ChiRo
- Must have completed the required training
- Must know the contents of the authorization (FormA + FormB).



*Nobody is
supposed to
ignore the
law...*

3. Animal experimentation in Geneva



Procedures specific to the **University** of Geneva and the Canton of Geneva

These procedures may be different in another canton

If experiment done in different Canton, FormA may be send in the one where the highest DS will be done

3. Animal experimentation in Geneva

FormB



Charges and conditions imposed by the canton are an integral part of the authorization and must be applied

 REPUBLIQUE ET CANTON DE GENÈVE Département de la sécurité, de la population et de la santé Service de la consommation et des affaires vétérinaires Case postale 78 1211 Genève 4 Plainpalais		Form. AB		
Autorisation de pratiquer des expériences sur animaux Numéro cantonal Numéro fédéral Article 10 de la loi fédérale sur la protection des animaux du 18 décembre 2002 (LPA, RS 405) Articles 128 à 147 de l'ordonnance sur la protection des animaux du 20 avril 2003 (OPAn, RS 405.1) Article 10 de l'ordonnance sur l'expérimentation animale du 12 avril 2012 (OEA, RS 405.102)		1 Directeur du domaine de l'expérimentation animale et adresse de l'institut Danièle Roppolo UNI DUFOUR rue du Général Dufour 24 1211 Genève 4		
2 Directeur de l'expérience				
3 Titre de la demande				
4 Type de demande	5 Applications précédentes			
6 La demande sera décidée comme suit Approuvée				
7 Valable à partir du	8 Expiration de la validité			
9 Charges et conditions - l'euthanasie au CO ₂ sera remplacée par une injection intra-péritonéale de pentobarbital (150mg/kg) dès que cela est possible - les critères d'interruption à appliquer sont ceux décrits dans le score sheet R3				
10 Animaux autorisés				
Catégorie d'animaux	Précédemment autorisés	Nombre d'animaux demandés	Nombre d'animaux nouvellement approuvés	Total des animaux
Souris am	0	279	279	279
Souris am	0	279	279	279
Souris	0	451	451	451
11 Degré de gravité prospectif maximal 2				

3. Animal experimentation in Geneva

AS WELL AS...



Questions/answers with the authorities
of FormA and Animex

3. Animal experimentation in Geneva



- 30 days appeal period: no experiments done (even longer if vacation...)
- Possibility of appeal by the OSAV against the cantonal decision
- Possibility of appeal by the DEA against the decision or against a charge

Announcements of experiment to the canton during the first
4 months after the effective start of the experiments

3. Animal experimentation in Geneva

- Experiments should be performed as described in FormA
- If modifications are necessary: make a supplementary request (amendment)
- Changes can only be made after approval of the supplementary request by the canton
- The 30-days appeal period also applies to modifications (not if concerning addition of new experimenters)



3. Animal experimentation in Geneva



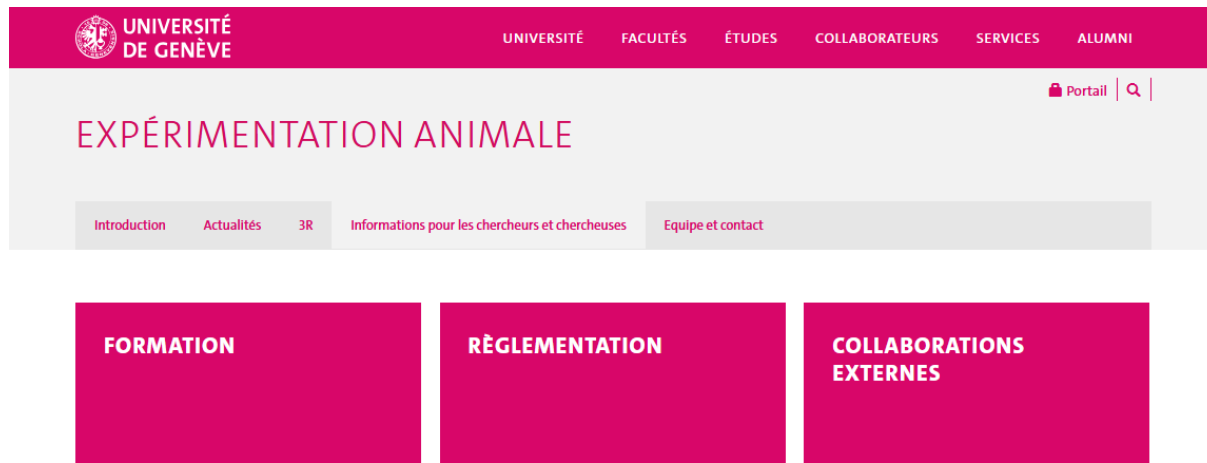
Performing experiments, procedures or modifications
without authorization is illegal and exposes you to
penalties

4. Animal experimentation at the University





4. Animal experimentation at the University



<https://www.unige.ch/recherche/expanim/informations-pour-les-chercheurs>



4. Animal experimentation at the University



Dr Daniele Roppolo

Directeur de l'Expérimentation Animale, Délégué à la Protection des Animaux



Dr Elsa Giobellina

Adjointe à la Direction de l'Expérimentation Animale, Déléguée à la Protection des Animaux

Source: <https://www.unige.ch/recherche/expanim/contact/contact>



4. Animal experimentation at the University

The Direction of Animal Experimentation (DEA) is a service attached to the UNIGE Rectorate

Our team takes care of:

- The **protection of animals** used for experimental purposes in collaboration with the management of animal facilities;
- **Integration of the 3Rs principle** into experimental protocols. We advise UNIGE and HUG researchers when preparing authorization requests;
- The qualifying and **continuous training** of experimenters;
- The **representation of UNIGE** in national and international networks dedicated to animal experimentation.

Source: <https://www.unige.ch/recherche/expanim/contact/contact>

4. Animal experimentation at the University

Type d'animal	Nombre d'animaux
Souris	28'342
Rats	1'644
Poissons	378
Reptiles	175
Lapins	40
Porcs / Miniporcs	25
Oiseaux*	46
Autres petits mammifères**	74
Total	30'724

** Oeufs fécondés de poules utilisés avant éclosion, comptabilisés comme "oiseaux"*

*** Souris épineuses, hérissons, tenrecs*

2023

Source: <https://www.unige.ch/recherche/expanim/description/les-statistiques>

4. Animal experimentation at the University

Type d'animal	Nombre d'animaux
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2023

Source: <https://www.unige.ch/recherche/expanim/description/les-statistiques>



4. Animal experimentation at the University

The number of animals used for experiments increased in 2023 (+6.8%)

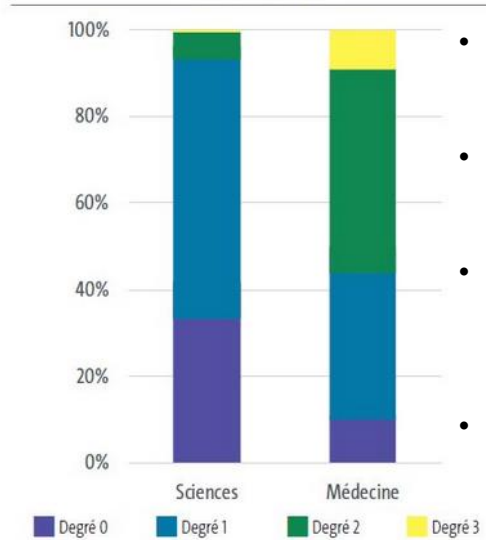
Observed in all species mainly used at UNIGE (mice and rats, which represent nearly 98% of the animals used)

+ 7% mice

+ 6% rats

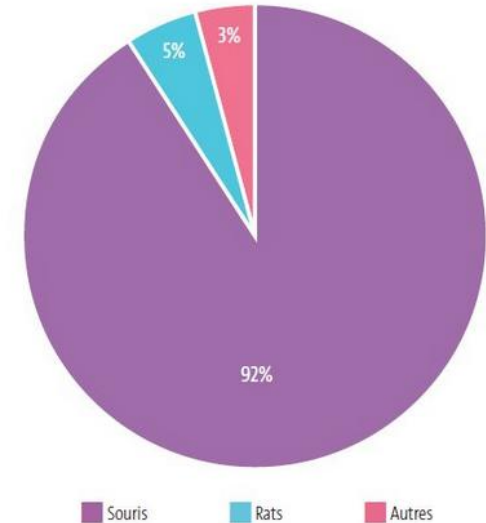
4. Animal experimentation at the University

Animaux d'expérience par degré de gravité (%)
selon les facultés



- **Degree of gravity 3**
9%
- **Degree of gravity 2**
46%
- **Degree of gravity 1**
34%
- **Degree of gravity 0**
11%

Animaux d'expérience en 2023 par espèce



Source: <https://www.unige.ch/recherche/exanim/description/les-statistiques>



4. Animal experimentation at the University

Principal study director

- Authorization holder
- Legal responsible for the authorization
- Contact person
- Supervises and knows the entire project

→ Module 1

→ Module 2

Deputy study director

- Project manager and contact person in the absence of the experience director

→ Module 1

Involved person

- Anyone performing procedures on live animals (including sacrifice)

→ Module 1



4. Animal experimentation at the University

Continuing education for module 1 and 2

4 days over 4 years

Advise: at least 1day/year of training = 6hrs



4. Animal experimentation at the University

AGENDA

[Agenda complet](#)

3 R Swiss 3R
C C Competence
Centre

E-Learning

🕒 12.11.2024 09:00 – 12:30

REPLACEMENT IN ONCOLOGY RESEARCH WEBINAR

Co-organized by the Swiss 3R Competence Center (3RCC) and the French Center for 3R (FC3R), this half-day workshop aims to deliver cutting-edge insights into replacement methods in oncology research. Experts will present how in vitro and in silico...

📍 Online

Octobre 2024						
30	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1	2	3



5. Animal experimentation at the CMU



5. Animal experimentation at the CMU

Animal facilities (before 2025)

ZOOTECHNIE

Breeding and care of laboratory animals

- Academic director: Doron Merkler
- Contact person: Pierre Bonnaventure



Tel: 022 379 00 87, 079 604 02 34

pierre.bonnaventure@unige.ch

<http://www.medecine.unige.ch/zootechnie>

P2: Care of experimental animals with class 2 biological agents

- Academic director and contact: Doron Merkler

Doron.Merkler@unige.ch

<https://www.unige.ch/medecine/fr/recherche/corefacilities/>

5. Animal experimentation at the CMU

Animal facilities (Since 2023)

ACTUALITÉS

Ouverture Animalerie S(O)PF



LA NOUVELLE ANIMALERIE SOPF EST
OUVERTE DEPUIS AVRIL 2023

**La zootechnie y maintient et amplifie
déjà vos reproducteurs en zone Breeding
SOPF, il est à présent temps que tous les
groupes de recherche SPF y entrent !**

Avantages

- Un nouveau **statut sanitaire** exempt de tout agent pathogène (Liste Felasa) : pas d'hélicobacter, pas de MNV... signifiant une réduction notable des risques d'interférences avec vos protocoles.
- Pour les animaux fragiles, les immunodéprimés, l'assurance de travailler dans des conditions optimales.
- De meilleures performances de reproduction, les élevages (sevrages, identification, biopsies...) sont gérés par la zootechnie
- Des labos équipés (pailasse, PSM, isoflurane...) situés à proximité des zones d'hébergement, clairs et modernes.
- De meilleures conditions de travail pour de meilleurs résultats.

5. Animal experimentation at the CMU

3 SPF housing areas

~ 100 m² for Rats housing > 800 cages

~ 200 m² for Mice housing > 5'300 cages

1 SOPF housing area, a sanctuary dedicated to colony breeding,

~ 100 m² and > 2'500 cages

Some areas with special autonomous, separated & securized status

One P2 area

One axenic/ Germ Free area

Integrated platforms inside the animal facility

Transgenesis,

Irradiation,

Light inverted cycles

More than 10 experimental laboratories fully equipped (LAF, integrated anesthesia devices, ...)

5. Animal experimentation at the CMU

Advantages

A new health status free of any pathogen (Felasa List): no Helicobacter, no MNV... meaning a significant reduction in the risks of interference with your protocols.

For fragile animals, immunodeprived animals, the assurance of working in optimal conditions.

Better reproductive performance, breeding (weaning, identification, biopsies) are managed by zootechnics

Equipped labs (bench, isoflurane, etc.) located near the accommodation areas, bright and modern

Better working conditions for better results

5. Animal experimentation at the CMU

Goal for the new animal facility accreditation

=

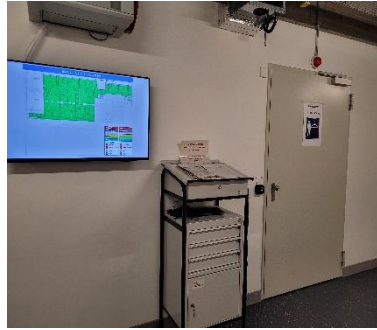
No more animal experiments outside the animal facility (except NEUFO – 8th floor)

Obtained the 7th of March 2025

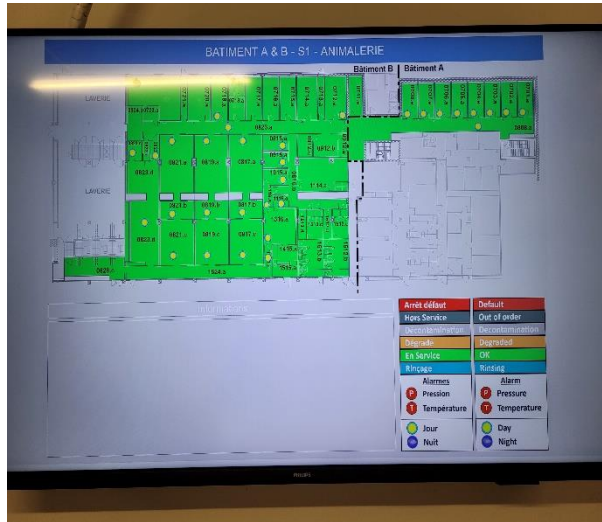


Between April/June 2025... to Sept....

5. Animal experimentation at the CMU



5. Animal experimentation at the CMU



Register yourself when arriving and leaving !

5. Animal experimentation at the CMU

Focus sécurité



De 7:00 à 15:30

L'entrée en S(O)PF est règlementée mais libre, et vous trouverez le personnel de la ZOO pour vous renseigner et vous assister en cas de besoin.

De 15:30 à 17:00

Vous devrez vous munir d'un poste de travailleur/euse isolé-e, connecté au réseau de Protectas.

Le we, avant 7h, après 17h

Toute demande spéciale doit être effectuée à l'avance et justifiée auprès de la ZOO et vous devrez vous munir d'un poste de travailleur/euse isolé-e.

5. Animal experimentation at the CMU

Head of S(O)PF – Axenic Animal facility : Anthony Fort, Coordinator of Operational Teams

Office n°: CS1.0735.a

Tél.: 94 350

Email: anthony.fort@unige.ch

Back-up : Jenny de Pont, Axel Kirschbaum

PyRAT software support : pyratsupport@unige.ch

Veterinary Support : vetsupport@unige.ch

5. Animal experimentation at the CMU

Staff Entrance Procedure

**The S(O)PF facility is the cleanest area among all the animal facilities.
You must respect a 72 h quarantine if you come from any other animal facility.**

You must :

- Undress,
- Wash and disinfect your hands



Entry sas, hands washing



Personal deposit lockers

5. Animal experimentation at the CMU

Staff Entrance Procedure

**The S(O)PF facility is the cleanest area among all the animal facilities.
You must respect a 72 h quarantine if you come from any other animal facility.**

You must :

- Undress,
- Wash and disinfect your hands
- Dress with the dedicated suit,
- Wear the individual protective equipment,



Hands disinfection device

5. Animal experimentation at the CMU

Staff Entrance Procedure

**The S(O)PF facility is the cleanest area among all the animal facilities.
You must respect a 72 h quarantine if you come from any other animal facility.**

You must :

- Undress,
- Wash and disinfect your hands
- Dress with the dedicated suit,
- Wear the individual protective equipment,

And pass through the air shower.



Showering in an Airshower
with Dual Entrance

5. Animal experimentation at the CMU

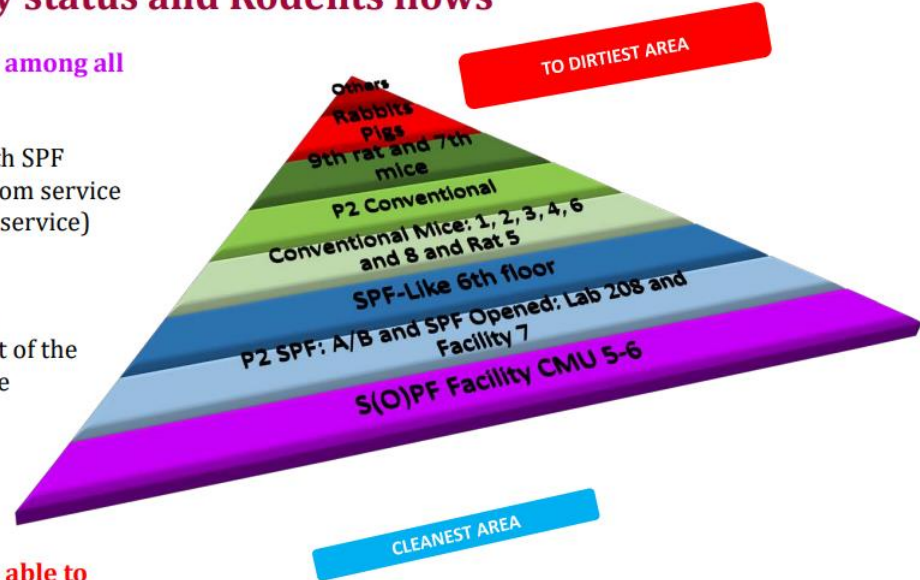
Sanitary status and Rodents flows

The S(O)PF facility is the cleanest area among all the animal facilities.

The incoming animals will be animals with SPF (approved suppliers) or SOPF (Derived from service providers or by the transgenesis internal service) status.

To make some experiments or sacrifices, you will be authorized to take animals out of the S(O)PF animal facility to bring them to the Conventional facility or to your upstairs laboratories,

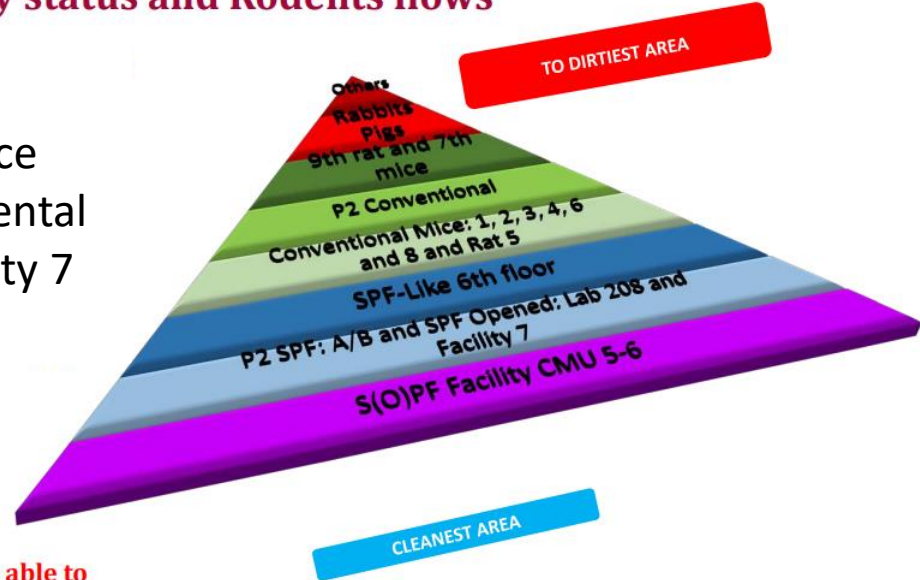
but IN NO EVENT will these animals be able to return to the S(O)PF animal facility.



5. Animal experimentation at the CMU

Sanitary status and Rodents flows

Has been changed in April, since facilities rooms became experimental rooms, such as lab 208 and facility 7



but IN NO EVENT will these animals be able to return to the S(O)PF animal facility.

5. Animal experimentation at the CMU

12h:12h cycle

Rodents = Nocturnal animals

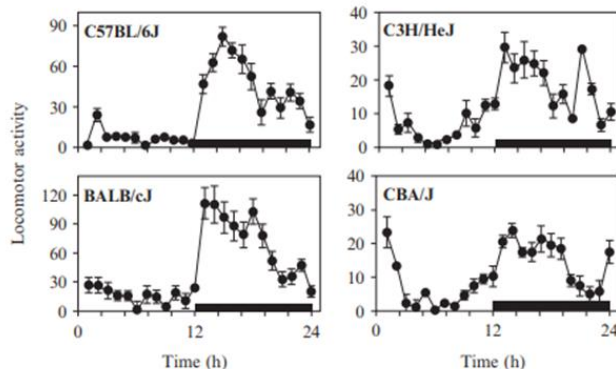


FIG. 6. Circadian patterns of locomotor activity in four strains of mice. Mean ($\pm$ SEM) transitions between two cages per hour for male mice ($n = 12$ per strain) on a 12:12 h-light:dark cycle. Although there were strain differences in the patterns of activity, all strains showed an increase in activity at the start of the dark phase (black line) and were more active during the dark phase of the light:dark cycle. (From: Kopp, 2001, Fig. 1, p. 94.)



5. Animal experimentation at the CMU

Animal welfare

- Food and water *ad libitum*
- Controlled temperature
(22°C in conventional –20°C in S(o)PF)
- Controlled humidity
(55% +/- 15 %)

Source: <https://www.unige.ch/recherche/expanim/>



5. Animal experimentation at the CMU

Animal welfare

- Food and water *ad libitum*
- Controlled temperature
(22°C in conventional –20°C in S(o)PF)
- Controlled humidity
(55% +/- 15 %)

Thermoneutrality : 30°C



Source: <https://www.unige.ch/recherche/expanim/>

5. Animal experimentation at the CMU

- Mice housed in group as much as possible
- Derogation if justified
 - Reproductive male
 - Fights between males
- For exp: 7 days maximum (degree 3)
less if there is sensory deprivation



Source: <https://www.unige.ch/recherche/expanim/>

5. Animal experimentation at the CMU

In the new S(O)PF:

- Tube for hiding
- Nesting cup
- Aspen brick (wood)



Source: <https://www.unige.ch/recherche/expanim/>



5. Animal experimentation at the CMU

- No handling using the tail
- Tunnel and/or cup handling



Source: <https://www.unige.ch/recherche/expanim/>



5. Animal experimentation at the CMU

- No handling using the tail
- Tunnel and/or cup handling
Cf. video

Thanks:

3 R Swiss 3R
C C Competence
Centre



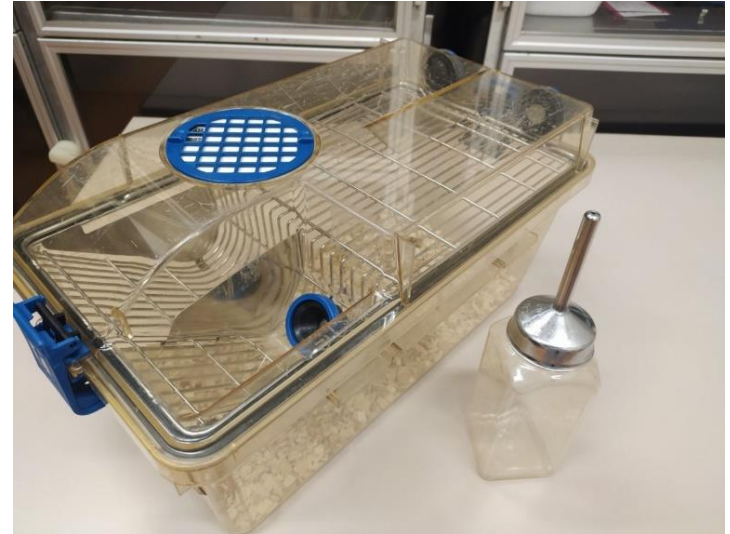
Source: <https://swiss3rcc.org/fr/>



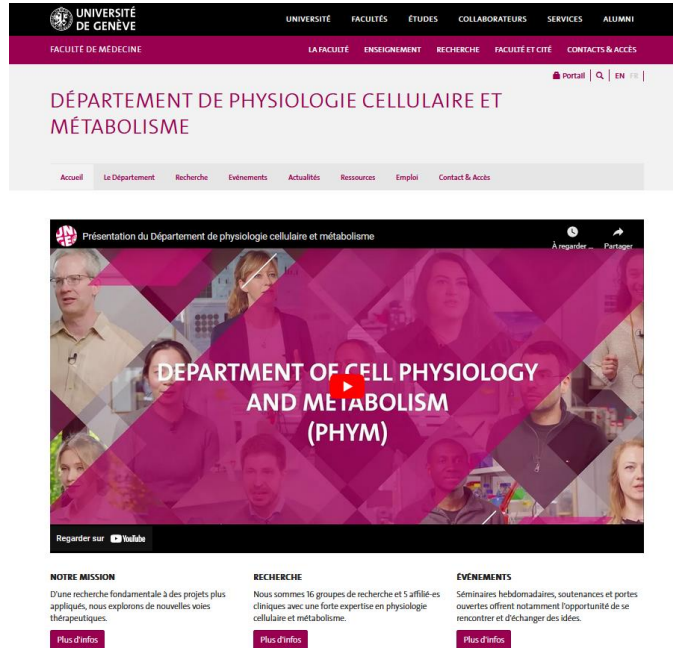
5. Animal experimentation at the CMU

Until the closing of the floors' animal rooms:

Transport in closed cages
(in the animal facility)



6. Animal experimentation in the PHYM department



6. Animal experimentation in the PHYM department

Two proposals :

- ChiRo service
- Dedicated rooms for animal experimentation
(Central block/5th floor)

300.- CHF (PHYM) /1000.- CHF (Other department) (2026 ?)



6. Animal experimentation in the PHYM department

Florian Visentin



Florian Visentin

Technicien

☎ +41 22 379 52 30

✉ Courriel

60% ChiRo

40% Pr P. Maechler group

Christelle Veyrat-Durebex



Christelle Veyrat-Durebex

Collaboratrice Scientifique

☎ + 41 22 379 52 10 / 16

✉ Courriel

40% ChiRo

40% Phenotyping of small animal core facility

Source: <https://www.unige.ch/medecine/phym/fr/le-departement/le-departement/personnel-commun/>



6. Animal experimentation in the PHYM department

Service from the PHYM department

- Technical help
- Technical development
- Protocol/technical advises/training
 - ✓ Animal welfare
 - ✓ Anesthesia/analgesia management
- SOP/score sheets/FormA redaction
- Continuous education



6. Animal experimentation in the PHYM department



RESSOURCES

Cours sur l'expérimentation animale

Le département propose chaque année un cours d'une demi-journée comme formation continue en expérimentation animale.

>>> **Présentation 2024 à télécharger ci-dessous**

Managing Animal Experimentation and 3R In your Research

C. Veyrat-Durebex, PhD
PHYM/SCMU

Jan/Feb. 2024

FACULTÉ DE MÉDECINE
DÉPARTEMENT Physiologie Cellulaire et Métabolisme



Contact

Christelle Veyrat-Durebex, adjointe scientifique

Sites web utiles

Le Swiss 3R Competence Centre (3RCC)

Human endpoints: un site qui vise à rendre l'expérimentation animale plus humaine

Le site web ResAL, avec de nombreux cours



6. Animal experimentation in the PHYM department



RESSOURCES

Cours sur l'expérimentation animale

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Contact

Christelle Veyrat-Durebex, adjointe scientifique

Sites web utiles

Le Swiss 3R Competence Centre (3RCC)

Updated regularly
Follow the PHYM News from
Véronique each Friday

Jan/Feb. 2024

FACULTÉ DE MÉDECINE
DÉPARTEMENT Physiologie Cellulaire et Métabolisme



6. Animal experimentation in the PHYM department

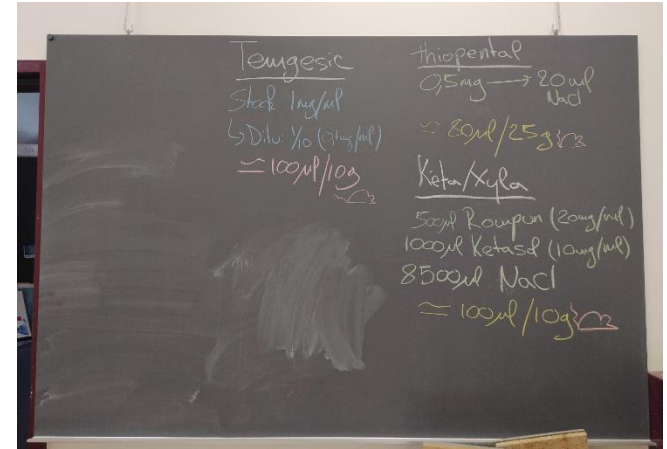
Until changes...

Room D05.1546a



6. Animal experimentation in the PHYM department

Room D05.1546a



6. Animal experimentation in the PHYM department

Room D05.1546a



Room D05.1550



6. Animal experimentation in the PHYM department

Room D05.1546b



6. Animal experimentation in the PHYM department

Room D05.1546b



6. Animal experimentation in the PHYM department

Room D05.1546b

- If needed, dark cabinet for adjusted dark/lights (to be booked)



6. Animal experimentation in the PHYM department



Attente 3 – Conventional animal facility
Sept...

6. Animal experimentation in the PHYM department

Until changes...

Central block C05.1741a



Access to be asked to the
animal facility
ChiRo service informed

To be reserved on the
PHYM webpage



Common rooms and materials
=
Respect

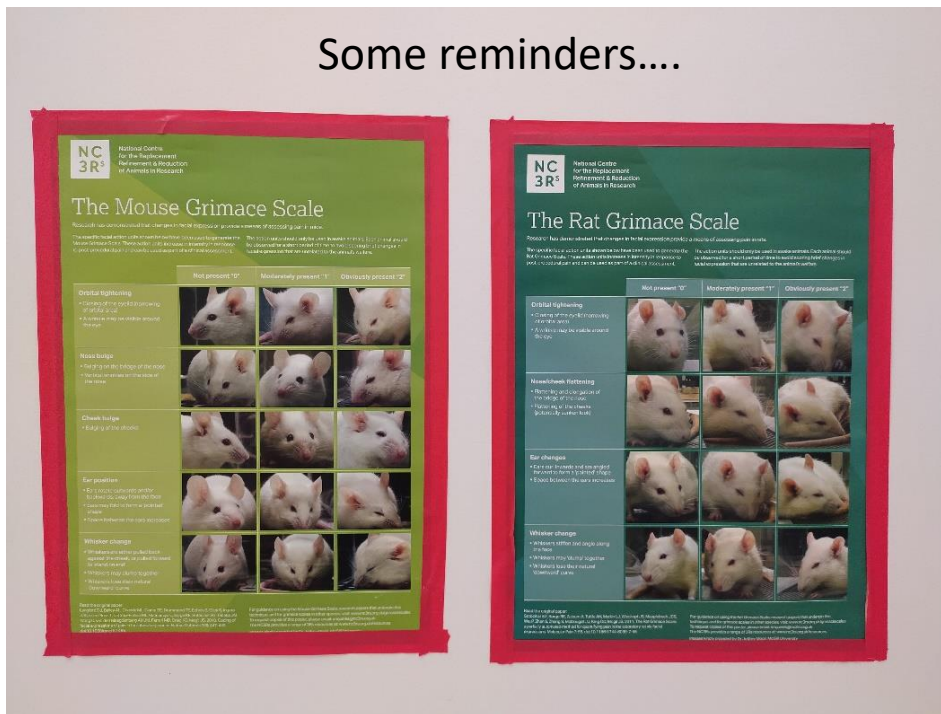
6. Animal experimentation in the PHYM department

Room 1



6. Animal experimentation in the PHYM department

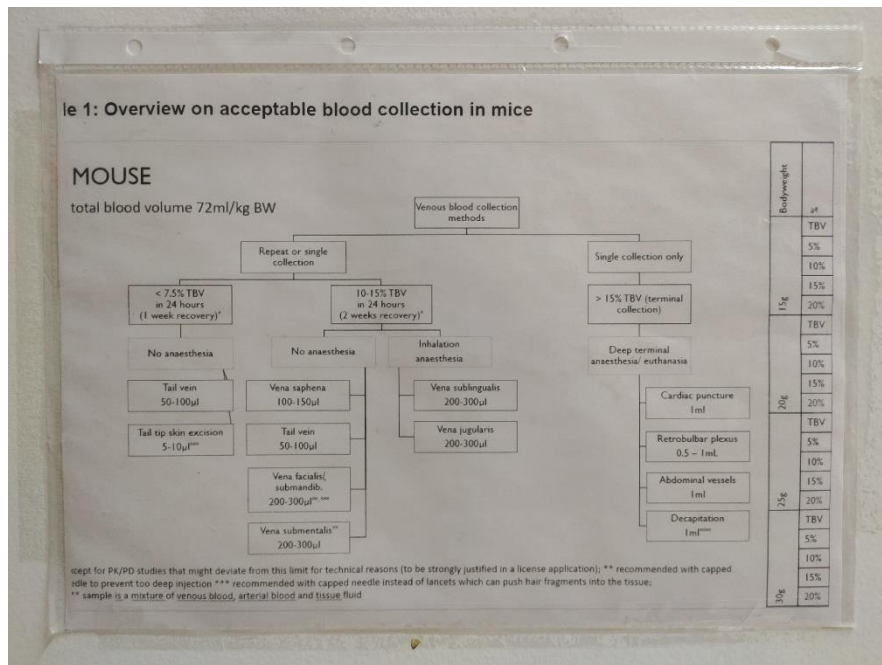
Some reminders....





6. Animal experimentation in the PHYM department

Some reminders....



UNIVERSITÉ DE GENÈVE

Reminder of the principle rules applicable to those engaging in animal research

Experiments involving animals are subject to laws and regulations. You will find below the principle relevant rules. These must be complied with by anyone using animals in experiments.

- 1) Animals shall only be used in experiments if no other method is available to reach the goal of the experiment.
- 2) The number of animals used must be limited to the smallest required number.
- 3) Animals must be treated in a manner that protects their wellbeing and dignity, and with all possible measures to diminish pain and stress.
- 4) Any experiment must receive prior authorization, including pilot studies and experiments with a degree of severity 0.
- 5) The person performing the experiment must be familiar with the contents of FormA* and FormB** before carrying out an experiment. The name of the persons performing the experiment must be included in the personnel list on FormA.
- 6) The contents of FormA and FormB, and all requirements stipulated in FormB, must be complied with. No procedures that were not declared on FormA shall be carried out.
- 7) An experiment may not be started prior to the expiration of the 30-day FSDO appeals deadline; additionally, it may not be started if such an appeal has been filed.
- 8) Each procedure carried out on an animal must be announced in advance to the Geneva Direction Générale de la Santé (DGS) during the six months following the effective start of the experiment. This rule shall apply from the very first procedure, and until such time as the DGS shall inform you that it is no longer necessary.
- 9) Any modification of the FormA must be detailed in a complementary request submitted to the Director of Animal Experimentation and must be authorized by the DGS, before it may be implemented.
- 10) A report on each experiment must be drafted and kept on file for 3 years after the expiration of the authorization. The elements that must be mentioned in this report are stipulated in Article 144 of the Animal Protection Ordinance.
- 11) The number of animals declared in "C" reports must correspond exactly to the number of animals actually utilized in the experiments.
- 12) The animals must be housed uniquely in authorized laboratory animal facilities, even for short periods.
- 13) Legal requirements for housing must be complied with (e.g., maximum number of animals per cage, maximum number of cages per rack, up-to-date labeling of experimental animal cages, etc.). Any exceptions must be indicated on FormA and be authorized (e.g., isolation of animals during experiments, special diet, etc.).
- 14) Anyone doing experiments must have previously successfully completed the mandatory training (module 1 or an equivalency from the DGS) and must follow the required continuing education program.
- 15) Projects involving animals carried out abroad must be submitted to the Commission Interfacultaire d'Éthique before beginning experiments (on this topic, please consult the institutional directive "Expérimentation animale relayée à l'étranger", ref. 0295).

Failure to comply with any of these rules may lead to criminal sanctions (imprisonment or fines, depending on the gravity of the infraction) and/or to administrative sanctions.



6. Animal experimentation in the PHYM department

Room 2



6. Animal experimentation in the PHYM department

Until changes...

Animal housing



6. Animal experimentation in the PHYM department

- Controlled dark/lights cycle (7:00 am/7:00 pm)



6. Animal experimentation in the PHYM department

- Cage for the transport inside the CMU (available downstairs) = **Mandatory**



6. Animal experimentation in the PHYM department



- **EXPERIMENTAL** cage only (do the transfer in the Pyrat system)
 - 5th floor – C05.1741a
- No cleaning from the animal facility – only checking if sufficient food/water and bedding – if not, notifications sent through Pyrat
- SO think about the WE!!!
- No food/house/paper/tunnel provided – bring it from the animal facility

6. Animal experimentation in the PHYM department

- If technical problems:

Si problèmes, contactez svp
If problems, please contact

Florian 95 740
Christelle 95 216

6. Animal experimentation in the PHYM department

- BUT (as in other common rooms):
 - The ChiRo is not in charge of the booking (and of booking overlaps)

Be conscious that working with animals are not always
easy to schedule



6. Animal experimentation in the PHYM department

- BUT (as in other common rooms):
 - The ChiRo is not in charge of the booking (and of booking overlaps)
 - Of the cleaning of the room



6. Animal experimentation in the PHYM department

- BUT (as in other common rooms):
 - The ChiRo is not in charge of the booking (and of booking overlaps)
 - Of the cleaning of the room
 - Of waste evacuation



6. Animal experimentation in the PHYM department

- **BUT** (as in other common rooms):
 - The ChiRo is not in charge of the booking (and of booking overlaps)
 - Of the cleaning of the room
 - Of waste evacuation

= BE RESPECTFUL OF THE WORK OF THE OTHER

6. Animal experimentation in the PHYM department

FormA



Don't forget to enter the number
of all the rooms where your
experiments will be performed
including the one of the ChiRo

6. Animal experimentation in the PHYM department

After April... June... sept...



Space reserved in Room 208

6. Animal experimentation in the PHYM department

Since January...



Free moving of animals between
floors and the conventional
animal facility

6. Animal experimentation in the PHYM department

Until changes ... Entry room



COBAS
(determining of metabolites/enzymes
in blood/urine)



Calorimeter
(determining of caloric content of samples)



Beta counter
(Beta radioactive emission)

6. Animal experimentation in the PHYM department

Devices from the “Phenotyping of the small animal” core facility



PHENOTYPING OF SMALL ANIMALS

Phenotyping of small animals through physiological and metabolic analyses

Clamp glucose / insulin

Tel: 022 379 52 16

Christelle.Veyrat-Durebex@unige.ch

Franck.Bontems@unige.ch

<https://www.unige.ch/medecine/phenotypage/en>

Contact members if interested

6. Animal experimentation in the PHYM department



EchoMRI
(determining of body composition)



Conventional animal facility = Room 208



7. Guidelines for managing the 3Rs and animal welfare

1. Statistics to **reduce**
2. Avoiding stress and pain to **refine**
3. Detecting pain in mice
4. Advantages for 3R in using ChiRo service/core facilities



7. Guidelines for managing the 3Rs and animal welfare

1. Statistics to reduce

1. Group experiments to reduce duplication of control groups
2. Use of non-invasive imaging techniques: longitudinal follow-up of the same animals
3. Improve experimental design and statistical analysis
specific courses
statistical support



7. Guidelines for managing the 3Rs and animal welfare

1. Statistics to reduce

3 R Swiss 3R
C C Competence
Centre

Biostatistics Task Force



About the task force

The 3RCC Biostatistics Task Force aims to address some of the key problem areas in experimental design, statistical analysis and reporting of experimental animal research results.

Services and Tasks:

- Reviewing grant applications, animal license requests and, in rarer circumstances, publications.
- Providing generalised guidelines for typical issues in animal research
- For example, see our guidelines on calculating power / sample size in animal research
- Think-tank for larger projects which can then be implemented by the Swiss 3RCC
- For example, monitoring the overall state of reporting practices in Swiss animal research

A relaunch of the task force, to better formalise and standardise its goals is set for mid-2022.

Need statistics help?

Send us a mail directly via biostatistics@swiss3rcc.org with your question / problem and we'll see if we can either help directly, or direct you to the appropriate resources at your institution.

biostatistics@swiss3rcc.org



7. Guidelines for managing the 3Rs and animal welfare

2. Avoiding stress and pain to Refine

WHY?



7. Guidelines for managing the 3Rs and animal welfare

2. Avoiding stress and pain to Refine

- Ethical question
- Impact on the reliability of the data obtained: stress and pain have effects on the behavior and physiology of the animal



7. Guidelines for managing the 3Rs and animal welfare

2. Avoiding stress and pain to Refine

- **Stress**: set of reactions following pressures or constraints
- **Distress**: state of the animal that is unable to cope with stress
- **Pain**: as a factor of stress
- **Suffering**: emotional status of the animal linked to pain, distress and discomfort



7. Guidelines for managing the 3Rs and animal welfare

2. Avoiding stress and pain to Refine

PLEASE, minimum 1 week of acclimatization





7. Guidelines for managing the 3Rs and animal welfare

2. Avoiding stress and pain to Refine

- Improving detention conditions: minimizing transport, light and noise...

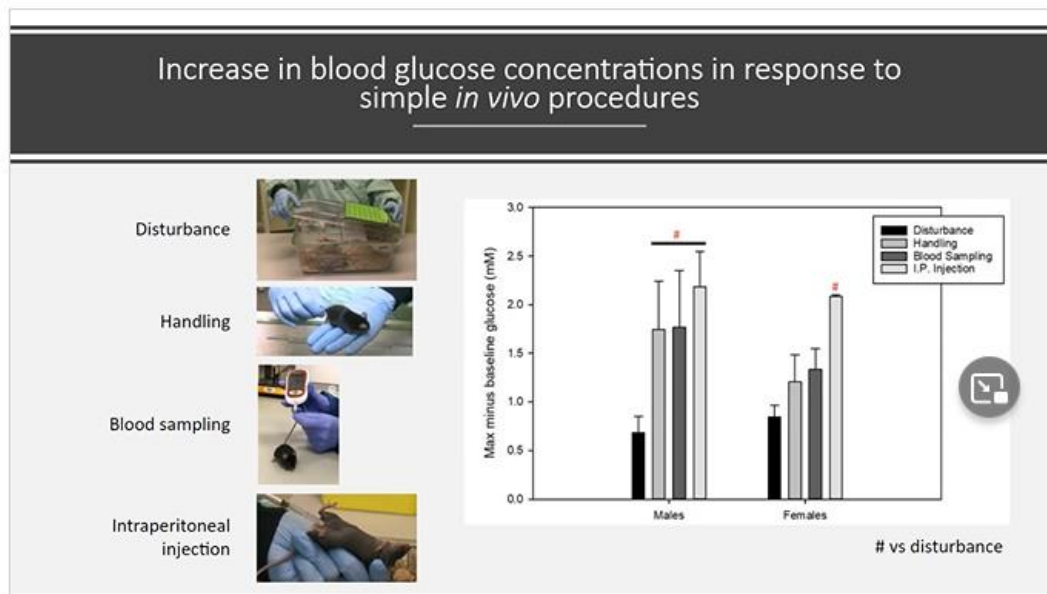


7. Guidelines for managing the 3Rs and animal welfare

2. Avoiding stress and pain to Refine

- Improving detention conditions: minimizing transport, light and noise...
- Animal handling: habituation, “gentle handling” techniques

7. Guidelines for managing the 3Rs and animal welfare



Training for you and
for the mouse

Source: <https://insidescientific.com/webinar/sex-drugs-and-protocol-how-researcher-choices-impact-experimental-outcomes-in-preclinical-diabetes-research/>



7. Guidelines for managing the 3Rs and animal welfare

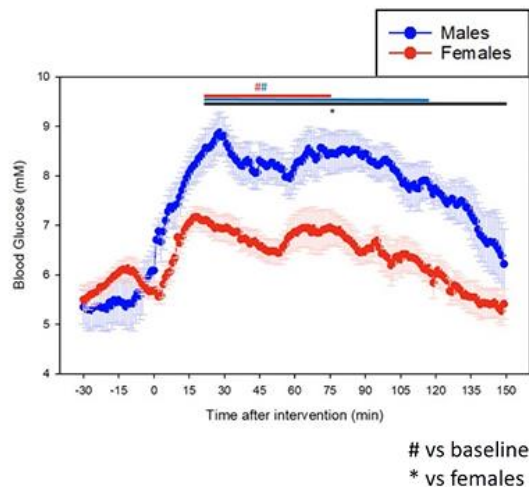
2. Avoiding stress and pain to Refine

- Improving detention conditions: minimizing transport, light and noise...
- Animal handling: habituation, “gentle handling” techniques
- Stress : example of unexpected sources...

7. Guidelines for managing the 3Rs and animal welfare

2. Avoiding stress and pain to Refine

Changing cage
increases blood
glucose
concentrations
for 1-2 hours

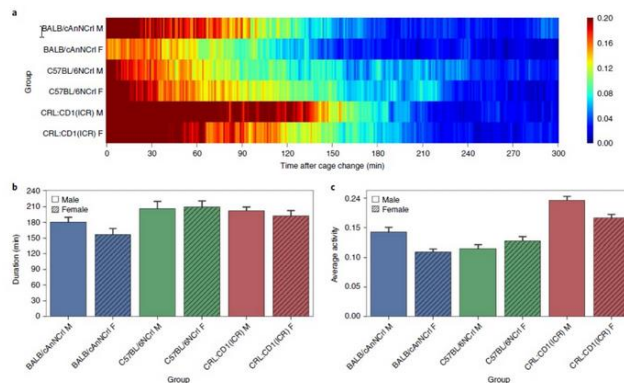




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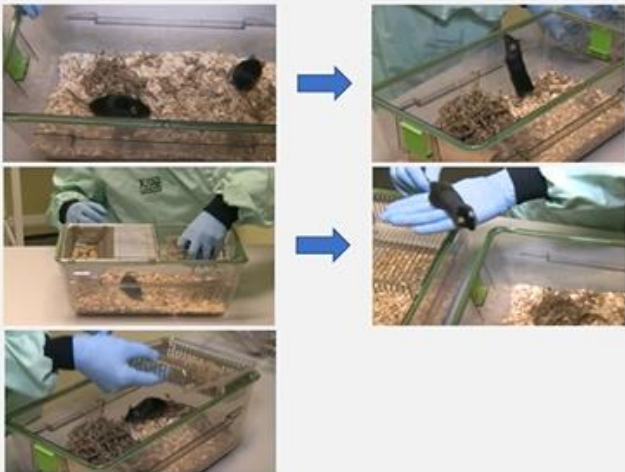
Study #1: Home Cage phenotyping of common inbred and outbred strains



TECNIPLAST

7. Guidelines for managing the 3Rs and animal welfare

Initiating the fast



Whole cage change
 Mouse transferred to new cage
 New bedding
 Ensures no food remnants in cage

Bedding retention
 Mouse transferred to new cage
 Bedding from old cage is added

No cage change
 Food hopper emptied
 Mouse remains in original cage

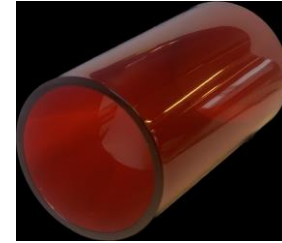


7. Guidelines for managing the 3Rs and animal welfare

- Improving detention conditions: minimizing transport, light and noise...
- Animal handling: habituation, “gentle handling” techniques
- Stress : example of unexpected sources...
- Enrichment of cages - piece of wood, running wheels, tunnels...



7. Guidelines for managing the 3Rs and animal welfare



Hammock made with masks....



3. Detecting pain in mice

- Behavior
- Nest
- Food and water intake / BW
- Appearance

Source: <https://www.unige.ch/recherche/expanim/>

Behavior

Comportement général

- Baisse d'activité
- Auto-mutilation
- Agressivité inhabituelle
- Anomalies de la locomotion (ex: chutes)
- Torsions
- Absence de construction de nid
- Animal qui se cache

- Decreased activity
- Auto-mutilation
- Unusual aggressivity
- Problems of locomotion
- Torsions
- No nest
- Hiding

Source: <https://www.charlesrivercampus.com>

Behavior

Comportement général

- Baisse d'activité
- Auto-mutilation
- Agressivité inhabituelle
- Anomalies de la locomotion (ex: chutes)
- Torsions
- Absence de construction de nid
- Animal qui se cache

- Decreased activity



Increased activity does not mean
NO PAIN

Source: <https://www.charlesrivercampus.com>

Activity



Mice implanted with catheters in the right jugular vein and a dorsal VAB since 4 days

Nest



Mice implanted with catheters in the right jugular vein and a dorsal VAB since 4 days

Nest

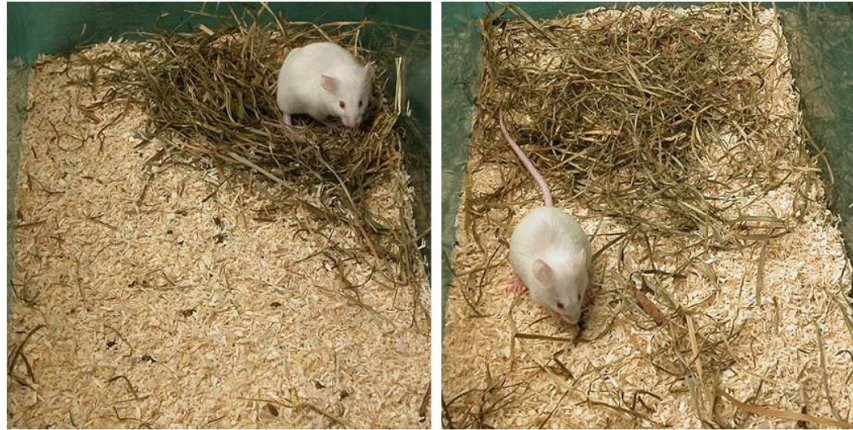


Fig. 1: Mice, 12 hours post-operatively, in their home cage

A well-preserved nest and clear territory structure was found frequently, if post-operative pain was alleviated (left). Damaged nests and several dents, which point to diverse resting places were mainly observed if pain relief was accidentally omitted (right).

Source: <https://www.forschung3r.ch/en/publications/bu31.html>



- Food and water intake if isolated mouse
- BW gain if non-isolated mouse

Chronic pain → decreased BW gain
BW loss

Source: <https://www.unige.ch/recherche/expanim/>

Appearance

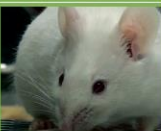
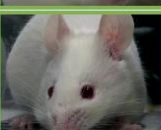
Apparence

- Pilo-érection
- Pelage souillé
- Posture anormale, dos voûté
- Chromodacryorrhée (rat)

- Pilo-erection
- Absence of grooming
- Abnormal position, arched back



Source: <https://www.charlesrivercampus.com>

	Éléments d'expression faciale		
	Signe absent "0"	Signe modérément présent "1"	Signe évident "2"
Contraction orbitaire - Fermeture des paupières (rétrécissement de l'ouverture orbitaire) - Un pli peut apparaître autour de l'œil			
Gonflement du nez - Gonflement de l'arête nasale - Plis verticaux sur le côté du nez			
Gonflement des joues Gonflement des joues			
Position des oreilles - Les oreilles se tournent vers l'extérieur et/ou vers l'arrière, s'éloignent de la face. Les oreilles peuvent se replier et avoir une forme plus pointue - L'espace entre les oreilles s'agrandit			
Changement des moustaches - Les moustaches sont soit retroussées en arrière le long du museau, soit redressées vers l'avant - Les moustaches peuvent se rassembler pour former une "touffe" - Les moustaches peuvent perdre leur courbe naturelle vers le bas			

Source: <https://nc3rs.org.uk/3rs-resources/grimace-scales/grimace-scale-mouse>

Pain

Tissu / Organe	Sensibilité à la douleur
Dents et cornée	++++
Testicules, vésicule biliaire	++++
Nerfs périphériques (moelle épinière)	+++
Peau, péritoine, plèvre	+++
Périoste, vaisseaux sanguins	++
Viscères	++
Articulations et os	+
Encéphale	-

Source: <https://www.charlesrivercampus.com>

Refine = good animal tracking = score sheet

Paramètre	Score Léger ou normal	Score Modéré	Score Sévère
Pelage	1 – Normal	2 – Mauvais état, diminution du toilettage	3 –Très mauvais état, absence de toilettage, plus autres signes cliniques...
Posture	1 – Dos vouté transitoire après administration ou prélèvement	2 – Dos vouté par période	3 – Dos vouté persistant
Pilo-érection	1 - Légère	2 - Marquée	3 – Permanente, plus autres signes cliniques...

Source: <https://www.charlesrivercampus.com>



Refine = good animal tracking = score sheet

Paramètre	Score Léger ou normal	Score Modéré	Score Sévère
Poids corporel	1 – < 10% de perte de poids	2 – 10 à 20% de perte de poids	3 – >20% de perte de poids

Source: <https://www.charlesrivercampus.com>



Refine = good animal tracking = score sheet

- Final score = sum of the scores for each criterion
- The higher the score, the more it indicates an increase in the animal's pain and/or distress
- The maximum score (endpoints) must be defined in advance as well as the measures to be taken to relieve the animal in FormA

Source: <https://www.charlesrivercampus.com>



4. Advantages in using service/core facilities for 3R

- Technical help by trained people (**Reduce/Refine**)



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Département fédéral de l'intérieur DFI
Office fédéral de la sécurité alimentaire et
des affaires vétérinaires OSAV
Protection des animaux

La présente information technique est une version actualisée de la directive « Prélèvement de sang chez les rongeurs de laboratoire et les lapins à des fins expérimentales ». On a actualisé les renvois aux textes de lois. *On a biffé, mis en italique et grisé les passages caducs du texte en vigueur.*

Information technique expérimentation animale

Prélèvements de sang chez les rongeurs de laboratoire et les lapins à des fins expérimentales 3.02

Source: <https://www.unige.ch/recherche/expanim/>





4. Advantages in using service/core facilities for 3R

2 Personal Abilities

The stress experienced by the animal during blood sampling does not only depend on the technique and the blood volume collected, but essentially the skill of the person who executes it. This is why it is essential that people taking blood samples are familiar with the animal species and the chosen technique. If not, they should learn and practice the chosen technique under the supervision of an experienced person. It's necessary take special care to handle the animals with care and calm.

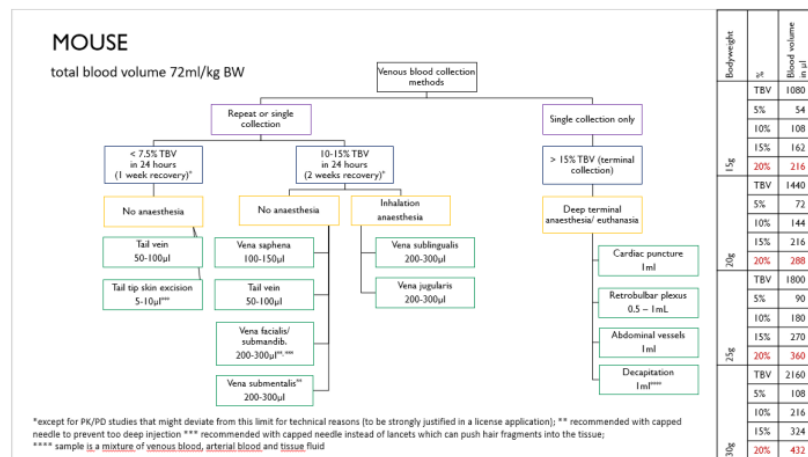
Le stress ressenti par l'animal lors de prélèvement sanguin ne dépend pas seulement de la technique et du volume de sang collecté, mais essentiellement de l'habileté de la personne qui l'exécute. C'est pourquoi il est essentiel que les personnes effectuant des prélèvements sanguins connaissent l'espèce animale et la technique choisie. Dans le cas contraire, ils doivent apprendre et pratiquer la technique choisie sous la supervision d'une personne expérimentée. Il faut prendre des précautions particulières pour manipuler les animaux avec soin et calme.

4. Advantages in using service/core facilities for 3R

- Help in experiments planification (**Reduce/Refine**)

Ex: timing/volume for blood sampling

Table 1: Overview on acceptable blood collection in mice



Based on course materials provided by ETH-LTK-cooperation for education and training in laboratory animal science.³⁰



4. Advantages in using service/core facilities for 3R

- Help in the management of Pain/Anesthesia
FormA writing (**Refine**)

26 Anesthésie et / ou analgésie

Évaluation de la demande selon les dispositions d'application (art. 135 de l'ordonnance sur la protection des animaux (RS 455.1)) : il faut indiquer le(s) substances(s) qui seront administrées, le dosage et le volume, le mode d'application prévu et la nécessité d'administrations ultérieures.

Justification de l'anesthésie / analgésie

Il convient de mentionner les raisons du choix d'une analgésie et d'une anesthésie, ou de la renonciation à celles-ci.



4. Advantages in using service/core facilities for 3R

- Writing of SOPs/Score sheets

In the respect of animal welfare

=

Gain of time for the procedure

Thank you
and
Relax ;-)