FENS | Federation of European Neuroscience Societies

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FENS commentary on calls to phase out animal experiments

The Federation of European Neuroscience Societies (FENS), federating more than 40 national and single discipline neuroscience societies across Europe and representing more than 20,000 members of the neuroscience community, welcomes the European Commission's response to the European Parliament's non-legislative resolution with respect to the phasing out of all animal experiments[1].

The Parliament's position did not take account of the knowledge of experts who are directly aware of its implications. It is important to ensure that the public is made aware of the consequences of phasing out the use of animals in research on medical progress and mental health. Understanding how our brain works is one of the main challenges for research and for society in general. With almost 100 billion neurons and orders of magnitude more connections between those neurons, the brain is one of the most complex systems we know. Our brain determines every aspect of our lives, from behaviour and perception, to movement, sleep, memory, thoughts, and feelings, in other words who we are and what we do. Understanding how our brain works is also essential for the treatment of a growing number of disorders related to the nervous system. Dementia, stroke, epilepsy, depression, and anxiety disorders are just a few examples of widespread diseases that affect millions of Europeans and citizens worldwide and cause immense suffering in patients and their families.

These brain diseases, which include neurological and psychiatric diseases, represent the largest health burden for European citizens affecting more than 25% of the EU population over their life span with an economic burden estimated at 800 billion euros per year. Current means to effectively treat or prevent brain diseases are clearly insufficient. The same also applies to other diseases including but not limited to cardiovascular, cancer and infectious diseases. The recent Covid crisis and the success of the vaccination campaigns in the EU have once more demonstrated that our society critically depends on highly innovative biomedical research involving animals as models.

Although considerable progress has been made in biomedical research using alternatives such as computational modelling, brain organoids and measurements in humans, most of what we can learn about the brain and behaviour depends directly or indirectly on research in animal models. As the Commission rightly says, "*although the science behind alternatives is no doubt progressing, it is not possible to predict when scientifically valid methods will become available that can replace particular animal procedures".* The main concern is that the *in vitro* or computer models are extremely simplified as compared to the real brain, reflecting the limits of our current knowledge. They also do not exhibit behaviour, making it virtually impossible to simulate or emulate the complexity of the nervous system without studying a living animal. Alternative approaches *in vitro*, such as cell cultures and organoids, or with computer models are constantly developed by scientists. They complement animal research in very useful manners but they will not be able to adequately and sufficiently replace all animal models in any foreseeable future. It would therefore be irresponsible to impose reduction targets and timelines. Scientists are very aware of the importance of animal welfare and stringent regulations in European

[1] 2021/2784(RSP): Resolution on plans and actions to accelerate the transition to innovation without the use of animals in research, regulatory testing and education https://oeil.secure.europarl.europa.eu/oeil/spdoc.do?i=57777&j=0&l=en

countries ensure that any suffering is avoided or strictly minimized, with standards that go beyond those applied in most other human activities and world regions.

Calls to end the use of animals in research seriously threaten the progress of brain research in the EU. Any legal implementation would have a negative impact not only on scientific and medical progress, but also on European health innovations, the European economy, and, even if it may look paradoxical, animal welfare. As the Commission states, the existing European legislative framework ensures high standards of accountability and oversight. This framework contributes to scientific excellence. Irrespective of a complete ban on the use of animals in the EU, biomedical research with animals would continue across the globe, in some cases under conditions that validate much lower standards for animal welfare. Relying on biomedical advances developed outside the EU, such as new vaccines or new treatments for psychiatric or neurodegenerative disease, endangers the EU's ability to lead and further boost scientific innovation, discovery and leadership.

If animal research were banned in the EU, the value of results obtained in animals will only benefit companies, research institutions, governments and ultimately people in other countries and continents. Such a ban would mean that Europe would increasingly depend on others for biomedical innovation. At a time when the ageing population desperately needs new solutions for a host of debilitating conditions, we should not forget the risks associated with excluding scientific innovation, supported by animal research, from the EU. Arbitrary deadlines will not facilitate the search for suitable alternatives to animal models in all cases in which it is possible.

FENS will continue to support efforts that call upon European decision-makers to avoid devastating measures for research and innovation, and ultimately for the European population as a whole, and to encourage scientific advancement while offering scientists the time and means to develop viable alternatives.

Federation of European Neuroscience Societies (FENS)

Founded in 1998 at the first Forum of European Neuroscience, FENS is the main organisation for neuroscience in Europe. FENS currently represents 44 European national and single discipline neuroscience societies with more than 20,000 member scientists from 33 European countries.

FENS promotes neuroscience research to policy-makers, funding bodies and the general public, both regionally and internationally. FENS promotes excellence in neuroscience research and facilitates exchanges and networking between neuroscientists within the European Research Area and beyond.

The FENS Committee on Animals in Research (CARE) advises FENS on the responsible use of animals in neuroscience research, supports the development of relevant resources on animals in research and promotes public education in matters related to the use of animals in neuroscience.