

Manifesto Young TPI





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Introduction

We, Young TPI, dedicate ourselves to advancing scientific research without using animals. Recognizing the pressing need to transition towards animal-free research methods, we hereby declare our commitment to catalysing this transformation. Our manifesto outlines our principles, objectives, and strategies for achieving a future where innovative research thrives without the use of animals.

Why do we need a Manifesto?

For the last few years, a new approach has arisen from the 3Rs (Replacement, Reduction, Refinement of animal testing) that is aimed specifically at the transition from using animals to using animal-free innovations. This is a complex transition that involves many actors and needs actions from all the players on different levels.

These actors include, among others, everyone who is involved in developing the technical innovations, the educational institutes that teach about these innovations and how to use them, financiers who decide which research gets funded, scientific journals that set certain standards, the experts consulted to draft regulation, the government who decides on policy, and society who can put pressure on all of the above.

As Young TPI we take a fresh look at this transition from the perspective of young contributors to the transition, and we see that more action is needed. While the technical innovations are an important part of the puzzle, so are the interactions between the different actors in this transition, leading us to ask big questions such as: what is the paradigm shift we are aiming for? What is going to be the end stage? Who should take which part in the transition? The result is this manifesto.

This manifesto was written with input from various brainstorm and feedback sessions with smaller and bigger groups of Young TPI members. We have formulated actions that are needed from all actors, and will explain in six themes what we believe needs to happen to accelerate the transition towards animal-free science.

Young people have an important role to play, so we will also lay out what we plan to do ourselves as Young TPI network for each of the themes.

“What is the paradigm shift we are aiming for? What is going to be the end stage?”



ABOUT US



Established in 2022, Young TPI is committed to informing and engaging young individuals about the opportunities available to contribute to the transition towards animal-free innovation from an early career stage. We cultivate an open-minded approach towards this transition, identifying and addressing gaps or blind spots within the agenda. Through our initiatives, we aim to empower young people to actively participate in shaping the future of innovation. We organize activities, providing platforms for learning, collaboration, and meaningful contribution.

Young TPI





Core Values

- **Respect:** We uphold respect for all forms of life, with a particular emphasis on animals, and recognize the interconnectedness of human health, animal welfare and environmental well-being.
- **Justice:** We advocate for equality and justice for animals, humans, and the environment.
- **Courage:** We embody courage by adhering to our principles, even in the face of adversity and resistance.

Vision

Our long-term vision is a world where science is animal-free and human-relevant.

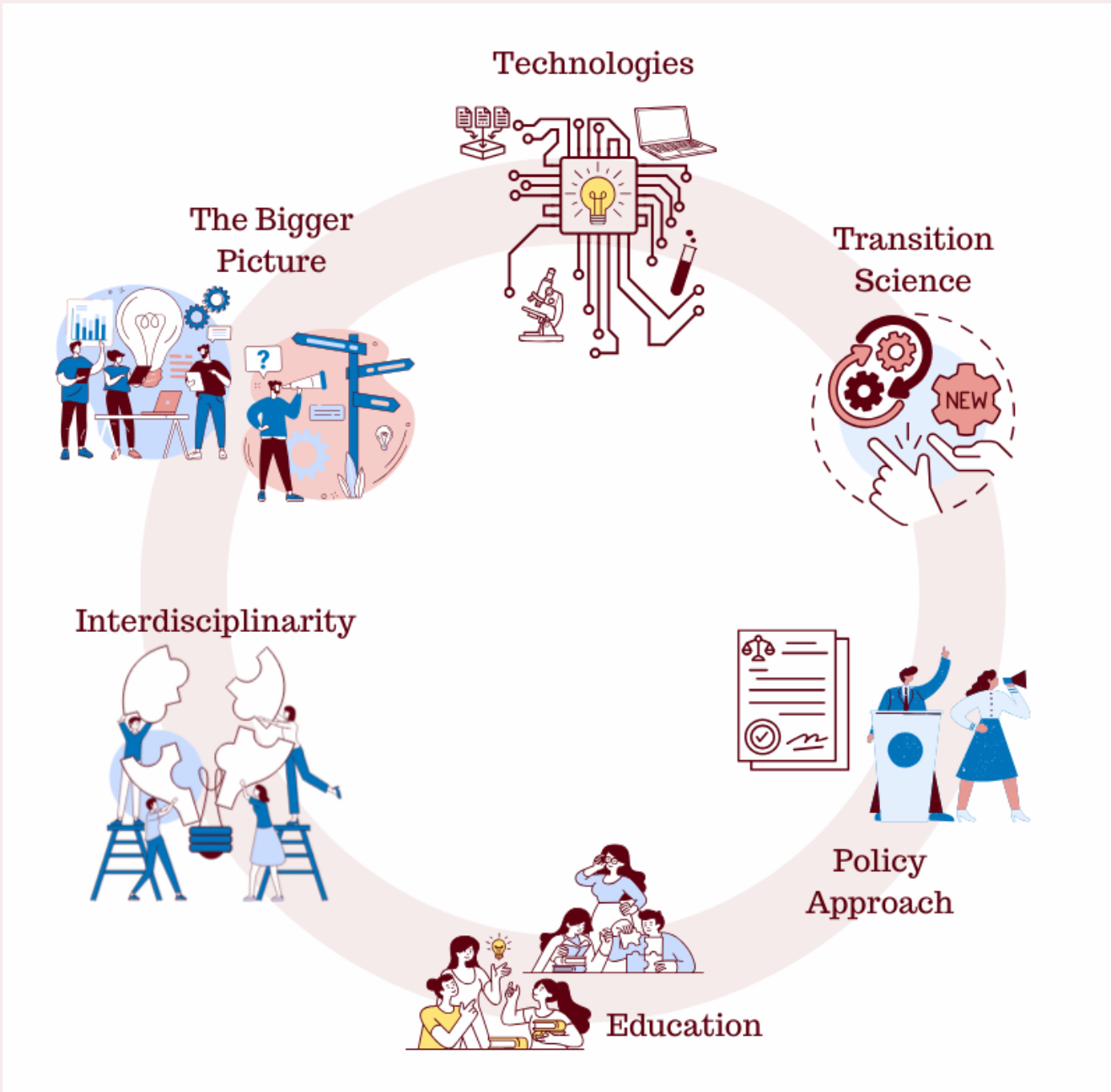
Young TPI's Vision: Empowering the new scientific generation to go animal-testing free.

Mission

Contribute to the acceleration of the transition to innovations without laboratory animals by providing open-minded input and raising awareness of animal-free options among young professionals and students.

Our strategies

- Empowering young people
- Creating a diverse and courageous community
- Promoting creative thinking about animal-free innovations
- Raising awareness of ethical considerations
- Accelerating the transition
- Opening dialogue
- Leading the transition



How do we get there?

Young TPI envisions progress within six key themes. We assess the current landscape, identify unmet needs, propose steps forward, and outline our role in each theme.

1. TECHNOLOGIES

Developing and Implementing Animal-Free Innovations

Current Situation

Many models already exist that can be used instead of animal tests. These are in vitro (cell models, both simple and more complex systems such as organ on chip), in silico (computational models), in chemico (chemical reactivity methods), human data and combinations of these. These technologies have the potential to better predict outcomes in humans than animal tests. Additionally, new developments in synthetic materials have proven to be promising in replacing animal-derived reagents commonly used in labs, yielding more reproducible results.

However, these technologies suffer from a lack of implementation. In part, this is caused by a lack of trust in the models, by researchers, industry, regulators and the public. In the scientific community acceptance of animal-free models is growing, especially among researchers facing practical limitations of animal models. But some skepticism remains about the applicability and accuracy of these animal-free methods, especially in fundamental research. Many industries still use on animal testing for drug safety and efficacy testing, and chemical toxicity testing.

We find other explanations for the low implementation in a lack of efforts to change the existing system (see 2. Transition science); a lack of incentive or other kind of push to use animal-free models (see 3. Policy); a lack of education on the possibilities of and skills for using animal-free methods (see 4. Education); a lack of collaboration between different disciplines (see 5. Interdisciplinarity); A lack of vision on phasing out animal models; and a lack of discussion about risk, priorities/goals, and a paradigm shift (see 6. Bigger Picture).

Steps Forward

- Increase pressure on funders to challenge the use of animals in applications, and to invest in research and development to enhance and scale up new technologies, as well as research for the validation of animal-free innovation models.
- Foster interdisciplinary collaboration and sharing of data and results.
- Develop platforms to speed up scientific validation and standardization efforts.

Role of YTPi

- Find better ways to bridge the gap between academia and industry by having active ambassadors on both sides.
- Host events in collaboration with universities, e.g. master classes/ meet the experts/ inspirational talks/ etc.
- Organize lectures /workshops around use of technologies and validation.

“These technologies have the potential to better predict outcomes in humans than animal tests. However, they suffer from a lack of implementation.”

2. TRANSITION SCIENCE

Guiding the Transition Process

Current Situation

To understand the transition towards animal free research and what it needs, Young TPI finds guidance in transition science. It helps us understand that many barriers in this transition are social rather than technical. Innovation such as new technological breakthroughs in human-derived models and artificial intelligence can only alter the current system under certain conditions. This requires changes in the market, regulations, societal norms, political will and governance structures. There are also significant societal trends influencing the system, such as questioning of human-animal relations as evidenced by movements to plant-based diets, and a growing awareness and rejection of animal testing.

The transition literature expresses how change needs both efforts to build the new system, as well as dismantle the established system. In this case, dismantling existing infrastructure and practices based on animal experiments. Another crucial element is to realize the relationships between multiple transitions. The transition to animal-free innovation is strongly linked to multiple sectors and industries (e.g. chemicals and pharmaceuticals), across multiple regions in the world that have different cultures and regulations, and connected to other transitions such as the food transition. To effectively implement change and understand our role as young generation, these multiple transitions need to be accounted for.

Looking through a transition science lens, we can see that many young researchers are working on animal-free innovations (see 1. Technology). But there is a lack of awareness among them about the dynamics in the transition and therefore a lack of communication between them and actors who are necessary in other parts of the transition. For example, end users of these innovations, which include other researchers and the pharmaceutical and chemical industry

Other social barriers that need to be addressed are a lack of rewards and recognition for the use of animal-free models and economic interests that hinder progress by favouring

the status quo of animal testing. Furthermore, active pressure from society is scarce even though polls and citizen's initiatives show a discontentment about animal testing in society.

Steps Forward

- Educate stakeholders on transition science principles so they can be motivated to influence the transition more than just working in their silo.
- Focus on both constructing new systems and dismantling old practices.
- Investigate the interrelation between multiple transitions to see common barriers and solutions.
- Generate societal pressure to accelerate the transition through advocacy and activism.

Role of YTPPI

- Educate members on transition science, empowering them to influence different levels of the transition process.
- Empower members to enact change within their respective fields, aligning their activities with the transition to animal-free innovations.



“Many young researchers are working on animal-free innovations but there is a lack of awareness about the dynamics in the transition”

3. POLICY APPROACH

Governing the Transition

Current Situation

The Dutch government has been an important player in this transition. For a long time, the Dutch policy approach to animal testing was centered around the 3Rs approach. This strategy aimed at minimizing the use of animals in experiments and improving their conditions. As the scientific community evolved and societal expectations for ethical treatment of animals increased, there arose a need for a more ambitious and proactive policy approach. In 2016, the National Committee for the Protection of Animals Used for Scientific Purposes (NCad) presented a groundbreaking recommendation: the Netherlands should strive to become frontrunner in the transition to animal-free innovation.

To operationalize this vision, the Transition Program for Innovation without the use of animals (TPI) was initiated in 2018. Spearheaded by the ministry of Agriculture, Nature and Food Quality, a network of stakeholders was created to work on the phase-in of animal-free innovations. This initiative showed a vision and dedication of the Dutch government which has since been diluted. To keep all stakeholders involved, ambitious goals or timelines are currently shunned. Despite its unique approach, the transition in the Netherlands also suffers from lethargy, and is in need of acceleration. If the Netherlands wants to claim a place as a forerunner in this field as it has before, it is very well equipped to do so, but it needs more political vision, policy implementation, and clear goals to get there. European rules are also slowing down progress, and the European Commission refuses to devise a plan with concrete goals for the transition to animal free research.

On the other hand, there are promising developments. For instance, lobbying efforts towards the EU are increasing, and a big investment was just made through the Groeifonds in a new centre for animal-free biomedical translation.

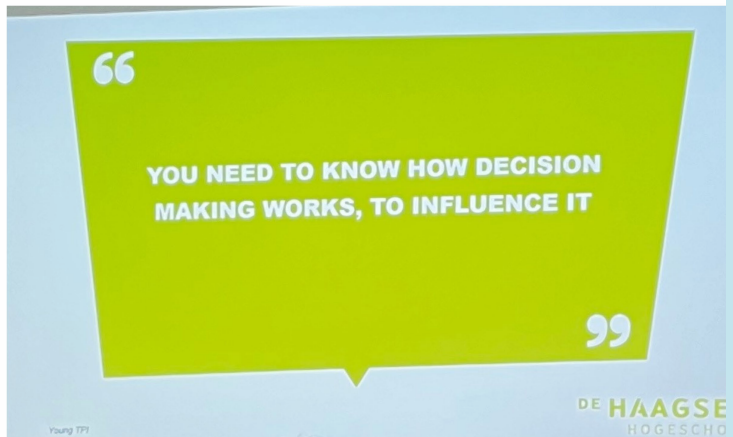
Steps Forward

- Lobby more as the Dutch government towards the EU to change regulations that currently oblige and incentivize animal testing.
- Facilitate discussions on setting concrete goals and timelines, together with experts in the field of transition science and experts in animal-free methods.
- Find ways to work on phasing out animal testing next to phasing in animal-free innovations.
- Collaborate across ministries and ensure that qualified experts in animal-free methods are fully integrated into policymaking and regulatory decisions.

Role of YTPi

- Provide information and resources to members for advocating policy changes and advocate for policy change as Young TPI.
- Organize events, guest lectures, and workshops to raise awareness and facilitate discussions on policy implications.
- Collaborate with universities and local communities to drive policy changes at grassroots levels.

“Despite its unique approach, the transition in the Netherlands also suffers from lethargy, and is in need of acceleration”



4. EDUCATION

Teaching the New Way of Thinking and Doing

Current Situation

Students starting their careers in the life sciences field now encounter animal-free science or alternatives to using animals during their bachelor's or master's studies. However, many young researchers have only become aware of these methods late in their careers. The general feeling is that there is a gap in the education about the current state of model development and implementation, and how one can contribute to facilitate the transition towards animal-free models.

Education also appears polarized: students feel they have to choose between animal models and animal-free methods. Education furthermore seems to lean towards animal models, fostering bias and tunnel vision. Individuals with a technological background are more inclined to pursue the animal-free path, while more fundamental research career paths often end up doing research that encompasses animal experiments.

Educational institutions also use animals as teaching materials in some courses, which in most cases is not necessary. There are multiple very promising initiatives throughout the country that aim to reduce the use of animals for this purpose, i.e. virtual reality devices, as well as initiatives that stimulate animal-free innovations and approaches.

At later stages of their careers, researchers often lack awareness of the possibilities offered by animal-free models, but also of the regulations and the developments therein. Consequently, researchers may not realize that animal-free models can be used, even if they are not recognized by certain regulatory bodies, as they have been accepted at various points in time. This is therefore another area where more education is needed.

Apart from the life sciences, the transition is also related to other fields of research, such as

philosophy, law, innovation science, computer science, clinical and health science, political science and governance. Education about the transition should therefore also be extended to these fields, and interdisciplinary science should be fostered (see 5. Interdisciplinarity).

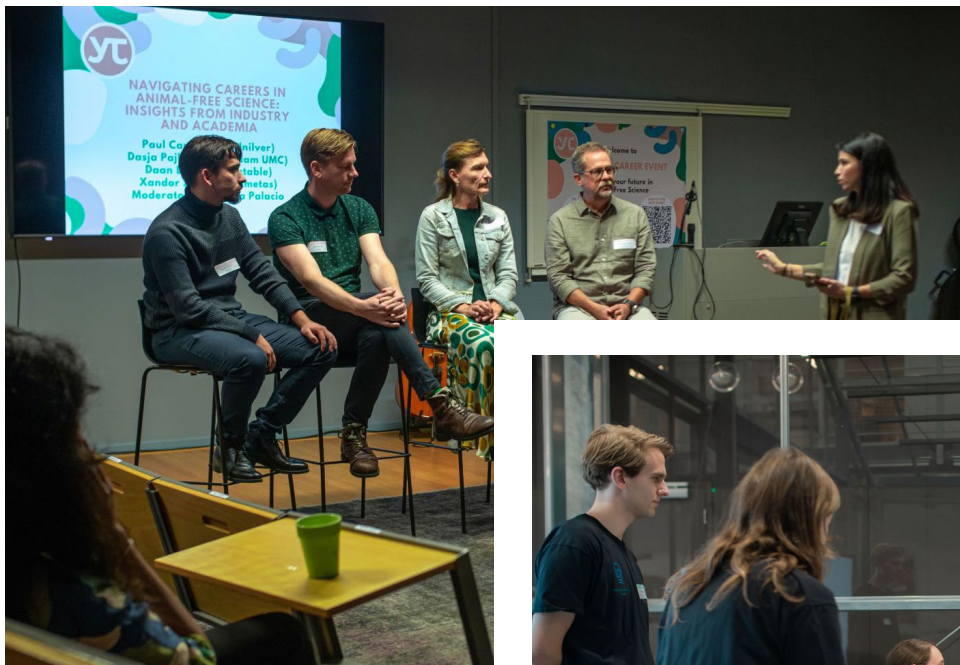
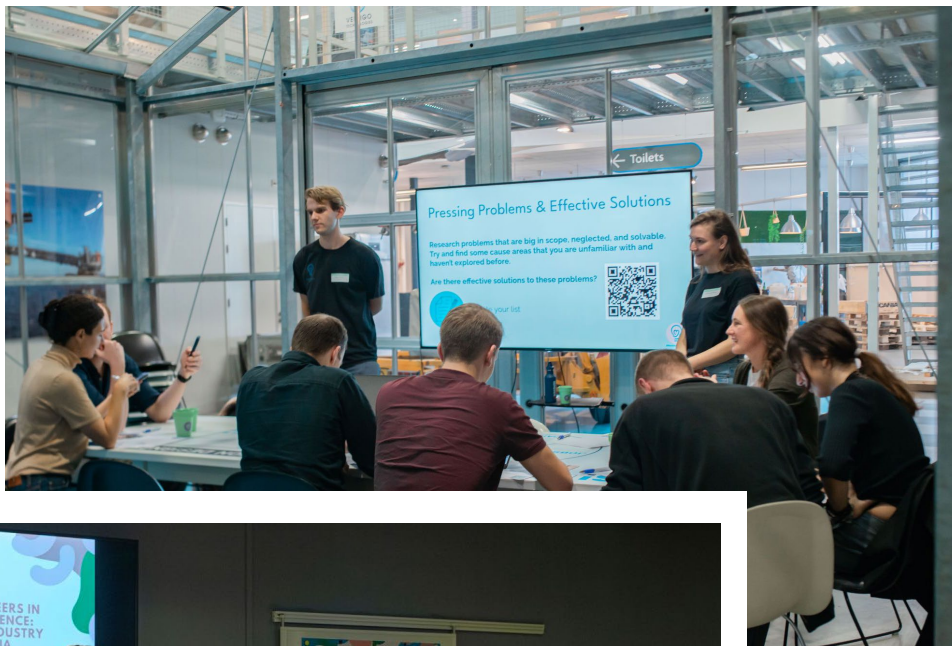
Steps Forward

- Introduce education on animal-free methods and regulations from a younger age, starting at secondary school.
- Incorporate comprehensive education on animal-free models and regulations from higher education onwards.
- Provide resources and support for researchers, including group leaders, to navigate the transition towards animal-free methods.
- Incorporate animal-free models into educational materials, and implement the Ambition Statement Education written by UNL and NFU in all educational institutes to vastly reduce the number of animals used for educational purposes.
- Educate and standardize the writing and use of systematic reviews that accumulate results from previous animal studies and encourage pre-registering research when (considering) using animals.

Role of YTPi

- Conduct lectures and workshops at higher educational institutes to promote awareness and understanding of animal-free methods.
- Engage with secondary schools to deliver positive messages about the importance of animal-free research.
- Advocate for policy changes to incorporate animal-free education into curricula at all levels and participate in the international education hub.

“...there is a gap in education about the current state of model development and implementation, and how one can contribute to facilitate the transition”



5. INTERDISCIPLINARITY

Facilitating Collaboration

Current Situation

Interdisciplinarity combines multiple academic disciplines into one activity. Since this transition takes place within various fields of research, we need interdisciplinary collaboration.

There is currently very little contact between different research groups, and between researchers, industry and regulators. We believe that this lack of collaboration and communication is an important reason for the lack of implementation of new technologies. All different players are working towards the same goal but in a different way and with little communication between each other, slowing down the transition. This applies to different sectors as well as across disciplines.

An example of the lack of collaboration across sectors is that academia is more focused on producing small scale 'groundbreaking' research driven by the "publish or perish" mentality. Meanwhile, with a central focus on profit, industry is hesitant to use models that have only been validated at a small (academic) scale and to invest in product development for models that, in most cases, have not been envisioned for large-scale and high-throughput testing. Additionally, the competitive nature of industry hinders the sharing of knowledge with the public, as well as in some scientific disciplines the publication of negative results is discouraged. These disparities in interests create the well-known valley of death for innovations.

An example of a lack of communication between disciplines is the existence of language barriers. For example, the same terms are used differently, or different terms are used to describe the same phenomenon.

While working interdisciplinarily allows for broad goals, certain fields are significantly underrepresented in animal-free innovation, mainly "non-beta fields" such as social and political science. Taking these 'lenses' into account in research and beyond is crucial to facilitate the transition.

Steps Forward

- Encourage funders to support interdisciplinary research initiatives.
- Increase exposure to lectures and workshops from diverse fields to foster collaboration, avoiding a focus on the "micro-environment" of a single discipline.
- Involve senior scientists to promote open-mindedness and establish consortia for interdisciplinary work.

Role of YTPi

- Organize events and activities that stimulate interdisciplinary collaboration among members, such as networking opportunities and skill-building workshops that enhance interdisciplinary work.
- Advocate for increased support and recognition for interdisciplinary research initiatives.
- Bring people from different disciplines in the network of Young TPI.

respect for...
About the only thing you can't do is ignore them. **Because** the human race forward. And while some may see them as the crazy people who are crazy enough to think they can change the world

YES! DELFT



“All different players are working towards the same goal but in a different way and with little communication, slowing down the transition”

6. THE BIGGER PICTURE

Addressing Overarching Questions

Current Situation

The transition to animal-free innovations raises significant societal questions regarding paradigm shifts, risk assessment, and priorities. However, these broader discussions are often overlooked in favor of technological advancements.

Within the transition the term paradigm shift is used quite a lot, in different ways. To Young TPI members, it means a radical mindset change from the golden standard being using animals, to a new golden standard being using other methods of research. To get there, we need courage to act on a clear moral vision of where we want to go, namely a world in which animals are no longer exploited for research.

An important aspect of the transition is dealing with risk. Animal research is done to research mechanisms, efficacy and safety risks. When moving away from research on animals, are we taking more risk with the lives of humans? Who is taking this risk and what do these people risk? (e.g. decision makers, citizens).

Another risk Young TPI members see is that when animal-free models fail, we will go back to animal models. On the other hand, continuing to use animals already brings significant risks as well. They have significant limitations, which is a risk for the safety, that we apparently do accept, and continuing on this path is also slowing down scientific progress.

Another important aspect of this transition is the question of which causes are justified to use animal testing. For example, we can ask ourselves how many more chemicals, products and pharmaceuticals we really need. Is it justified to do animal testing to produce even more chemicals and new products, to cure

every disease, to understand every detail of biology, etc.? This is yet undecided, as there is also the risk of innovation slowing down and it might need all those steps to reach big break-throughs.

Steps Forward

- Initiate discussions on paradigm shifts, risk assessment, and priorities to clarify societal goals.
- Measure and define the 'risk' of using animal research, to stimulate the realization that we are already taking a big risk as it is, and animal-free research can be safer and more effective in the end. Emphasize the importance of the transition for safe chemicals, pharmaceuticals and a safe environment.
- Foster critical thinking about research goals and priorities to ensure alignment with societal values.

Role of YTPi

- Empower young researchers to push for a paradigm shift within their fields.
- Facilitate discussions among members to address broader societal questions and drive ethical decision-making in research.
- Develop narratives and campaigns to raise awareness about the ethical and societal implications of animal testing, and advocate for urgency in transitioning to non-animal methods.



“The transition to animal-free innovations raises significant societal questions regarding paradigm shifts, risk assessment, and priorities”

Conclusion

Young TPI stands united in its commitment to advancing scientific research while championing animal-free methods. We have identified key areas for action and outlined steps forward in accelerating the transition towards animal-free science.

We need to work on the technological innovations that can be used in research instead of using animals. At the same time transition science shows us that we need social innovation, and this needs to be reflected in policy. Education is needed to prepare the new generation for a future where animal-free innovation is the norm. And interdisciplinary communication and collaboration should be fostered so that all parties can work together to find truly groundbreaking solutions that serve the same goal. On the way, we need discussions about what the paradigm shift is we are aiming for, what risks we are willing to take, and what priorities we choose to achieve our societal goals.

As Young TPI we see a role for ourselves in all these areas, as well as for all other actors involved in the transition. We recognize the complexities and challenges ahead, but we also see boundless opportunities for progress. By embracing courage, justice, and respect for all life forms, we can pave the way towards a world where science is not only advanced but also aligns with societal values.





In Summary,

What can I do when I am a...

Researcher

Make a commitment to animal-free innovation within your field. Advocate for its adoption and foster connections with fellow researchers to inspire a shift towards animal testing-free methods.

Young person or teachers in primary and high school

Initiate discussions on animal testing in educational settings, introducing alternatives to animal testing in engaging ways.

Editor or reviewer

Recognize the value of animal-free research on par with studies involving animal testing, promoting equal representation in scientific discourse.

Government actors

Advocate for EU-wide regulations supporting animal-free innovations and encourage the harmonization of legislation internationally. Initiate discussions on setting concrete goals, risk assessment, priorities, and paradigm shifts. Collaborate across ministries and ensure that qualified experts in animal-free methods as well as experts in transition science are integrated into policymaking and regulatory decisions.

Educational Institution

Incorporate standard courses on animal-free methods and alternatives into curricula. Establish concrete objectives to increase animal-free research while reducing reliance on animal testing. Ensure accessibility to animal-free research materials and prioritize systematic reviews. Additionally, integrate discussions on transition science to underscore students' roles in driving the transition.

Funder or investor


Direct resources towards funding animal-free innovations, supporting and prioritising both the development and validation of existing animal-free methods.

Company/Industry party

Foster collaboration to accelerate the development and implementation of animal-free innovations across various sectors.

Member of the general public

Educate yourself on animal testing and voice your opposition if you disagree with it. Particularly for the younger generation: Consider starting or transitioning your career towards animal-free practices. Explore how your expertise can contribute to this transition, joining a growing community of individuals dedicated to innovating without animal testing.



*Now it's your
turn*