

# VITALTISSUE.NL : A FRESH HUMAN TISSUE SUPPLY CHAIN TO ENABLE TRANSLATIONAL RESEARCH

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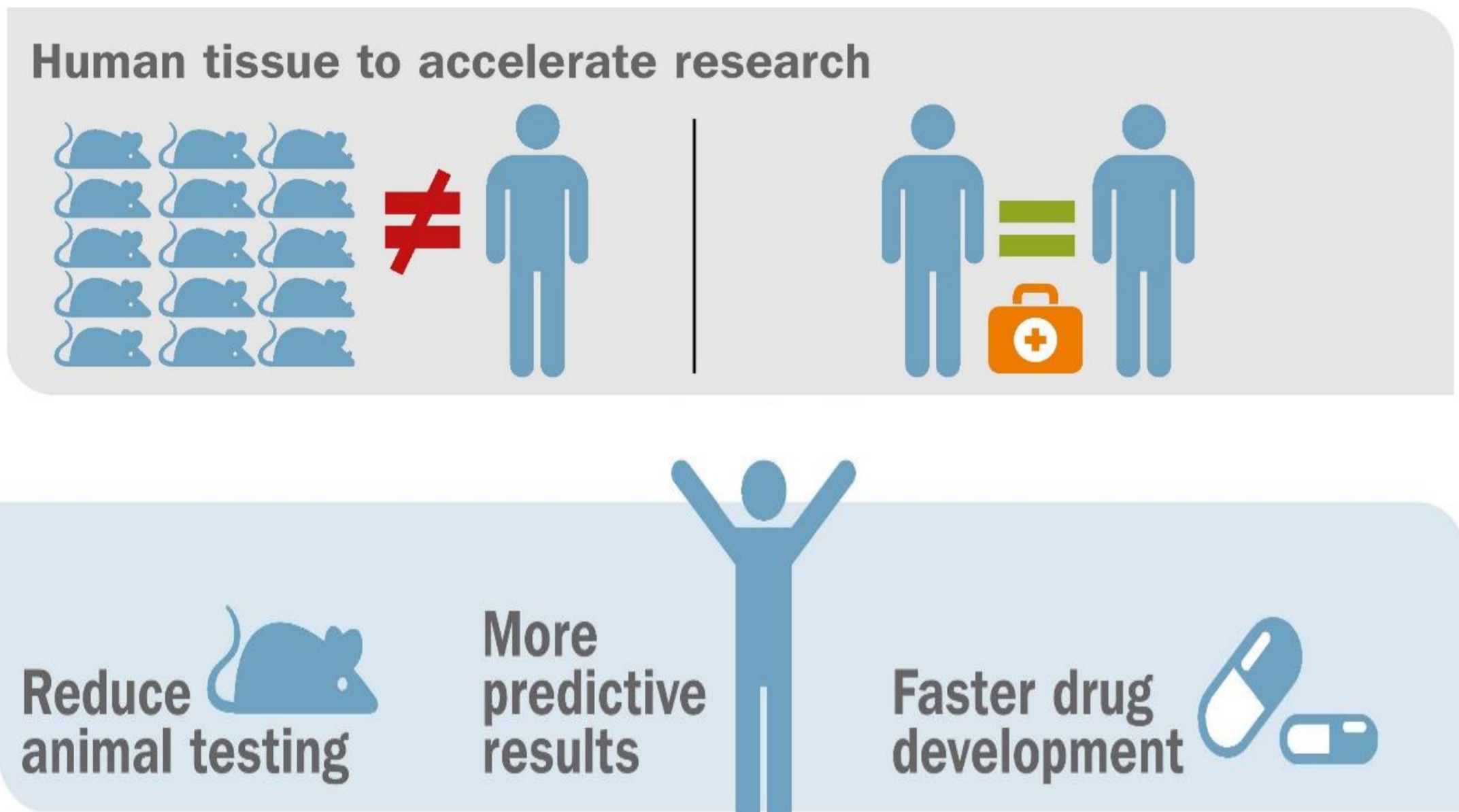


## INTRODUCTION

- **BACKGROUND:** Currently used cell lines and animal models sometimes lack translational value to the human situation. Therefore, a clear need for fresh vital human tissue exists among researchers.
- **PROBLEM:** Limited availability of vital human tissue, especially for non-academic and researchers within industry.
- **SOLUTION:** VitalTissue.nl is an online platform for suppliers (hospitals) and users of viable, non-frozen human tissue. It provides an infrastructure to improve access and quality of viable human tissue.



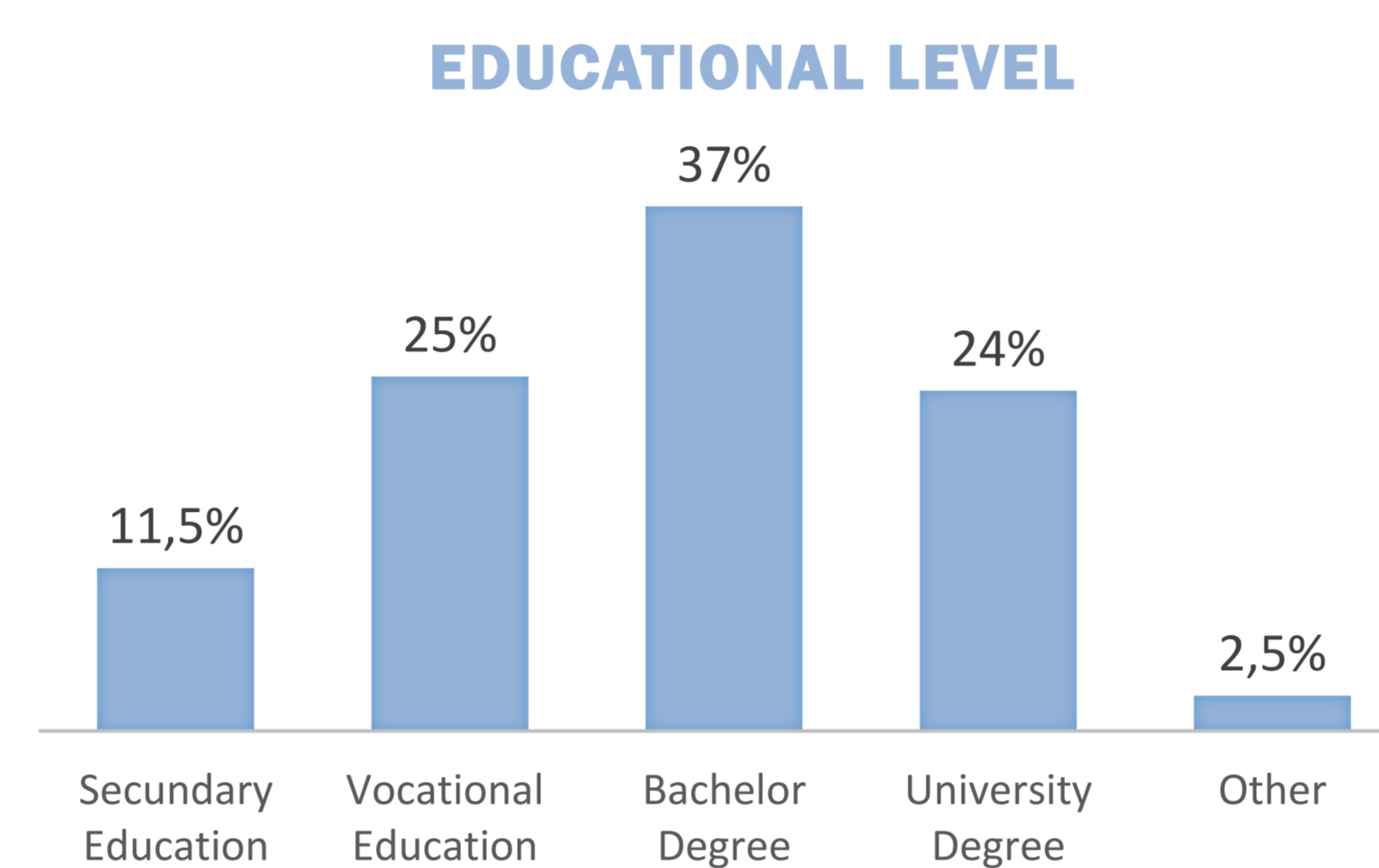
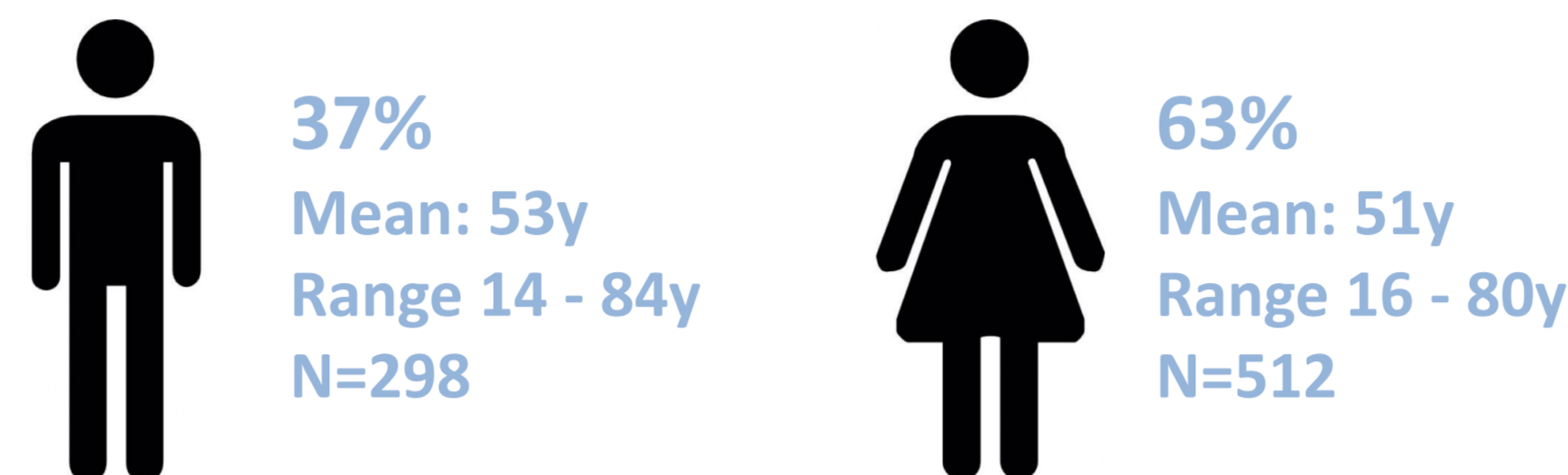
This concept will enable better translational models and contribute to the reduction of animal testing.



## METHODS

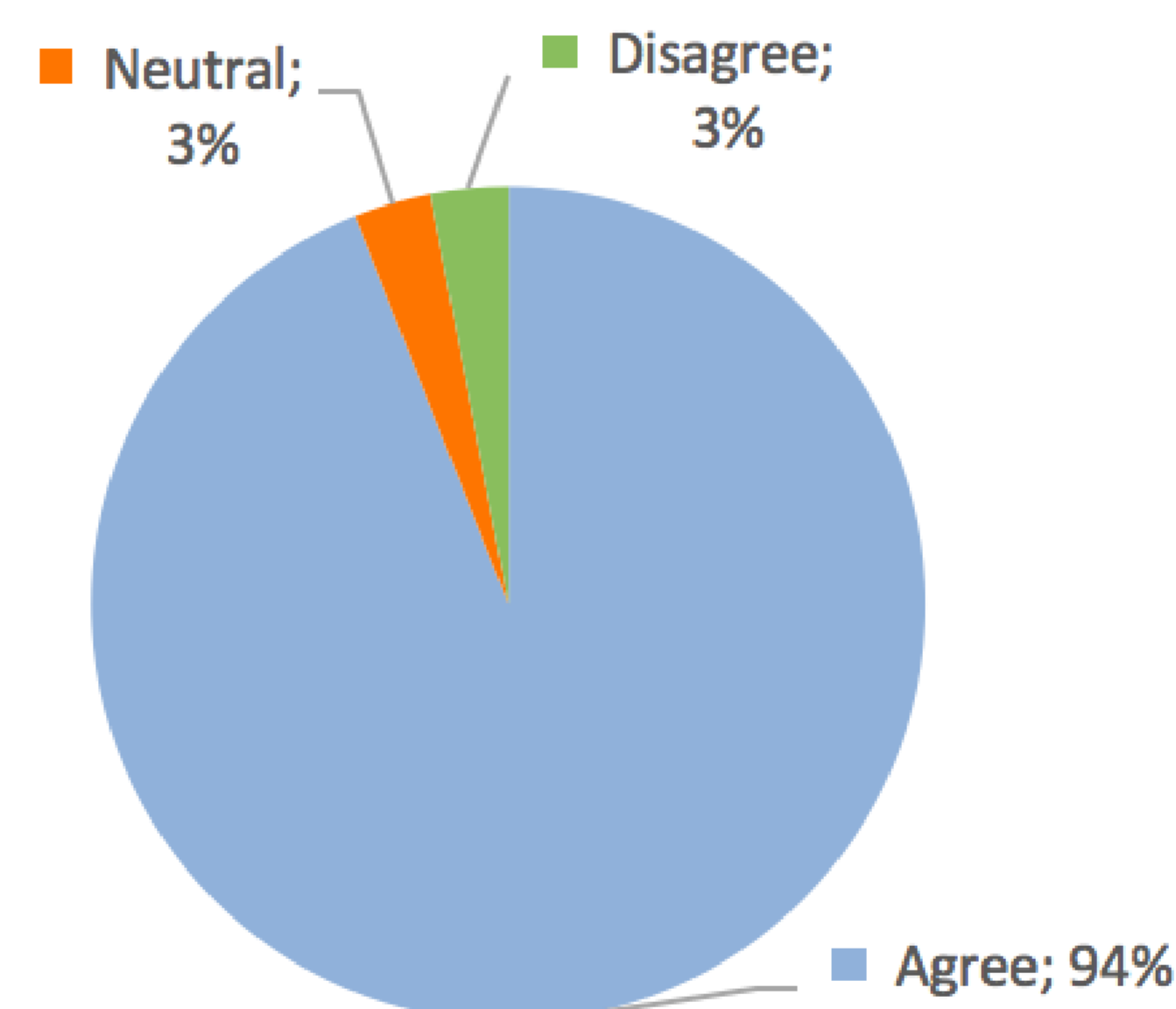
- A feasibility study was started to investigate ethical considerations of patients and future customers. Both qualitative and mix methods design were used, including semi-structured interviews and questionnaires.
- A questionnaire was developed aimed to obtain results of the general public. It consisted of 10 questions and statements, using a 1-7 Likert scale. A total of 818 Dutch citizens responded to the questionnaire.
- Furthermore 14 academic and non-academic researchers were asked about the potential of VitalTissue. What type of tissue do they need and what would be a sustainable business model?

## RESULTS QUESTIONNAIRE

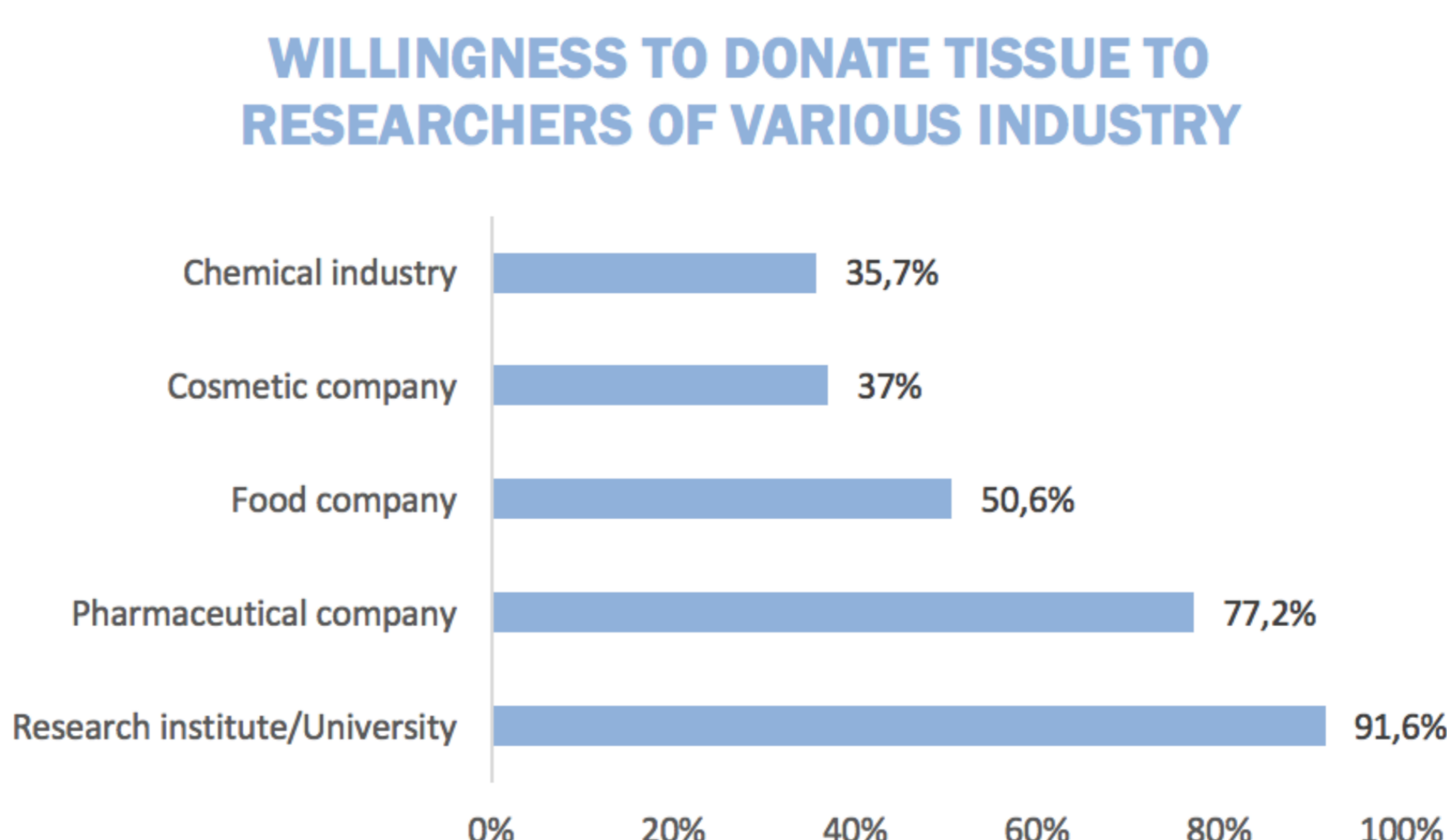


- The results of questionnaire showed that 94% of the respondents is willing to donate surgical left-over tissue for research.

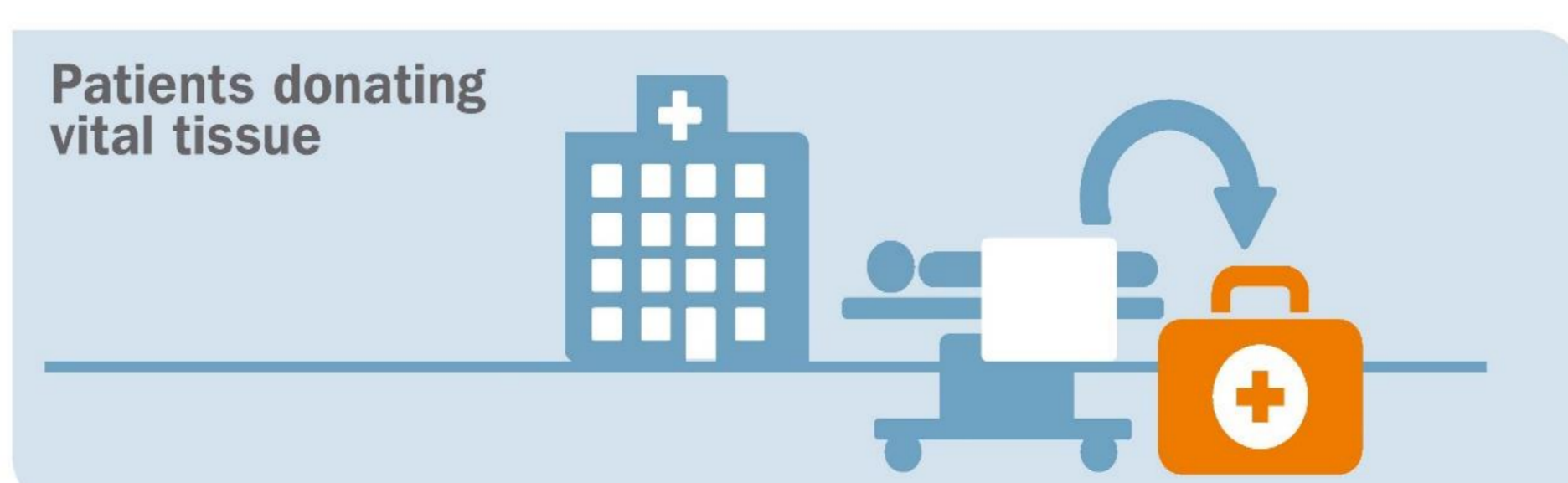
## I AM WILLING TO DONATE MY TISSUE FOR RESEARCH



- Type of organizations that respondents are willing to give permission to use their tissue.



- A small majority 54% of the study population prefer opt-in (choose to participate) over opt-out (choose not to participate) 46%.



## RESULTS MARKET RESEARCH

- **ADDED VALUE:** Overall positive responses among future customers regarding the added value of VitalTissue to improve accessibility to fresh, vital human tissue.
- **TISSUE TYPES:** Predominantly demand for intestine, liver, lung, skin and fat tissue, minimum sized 5-10 cm<sup>3</sup>. A desire was expressed for different tissue types from one patient.
- **CONDITIONS:** There is need for biosafe procedures and quality control of the tissue during transport and delivery. Non-academic researchers prefer informed consent of each patient, while academics advocated an information obligation. Legal and ethical considerations: both suppliers and users should be compliant regarding medical ethical permissions as a criterion to participate in the program.

## BUSINESS MODEL ADVICES:

- VitalTissue preferred as an independent non-for-profit organization.
- Sustainable business model of VitalTissue by a membership fee and an additional fee for each tissue sample provided (to cover the costs regarding supply and logistics).
- Main activities of VitalTissue: network and service for patients, physicians, researchers and suppliers, a delivery service for transportation of tissue and account management to maintain the relation the customers and the suppliers.

## CONCLUSIONS AND RECOMMENDATIONS

### MARKET RESEARCH

- A network of suppliers and users for vital human tissue has not been established yet. VitalTissue is considered of high added value, complementary to already existing biobanks.
- A feasibility study should be started to gain more insight in the logistic, quality and legal aspects.

### ETHICAL CONSIDERATIONS

- Dutch citizens are willing to donate surgical left-over tissue for research.
- Key factors according to patients are transparency and communication; easy accessible information for patients, physicians and researchers should become available.
- This facility will largely contribute to the reduction of animal testing and might be transferable to other countries.